

Proceedings of the
19th European Conference on
Management Leadership and Governance
A Conference hosted by
Bayes Business School
City, University of London, UK
23-24 November 2023



Edited by
Dr Martin Rich

A conference managed by ACI, UK

Proceedings of the
19th European Conference on
Management Leadership
and Governance
ECMLG 2023

Hosted by
Bayes Business School
City, University of London
UK

23-24 November 2023

Copyright the authors, 2023. All Rights Reserved.

No reproduction, copy or transmission may be made without written permission from the individual authors.

Review Process

Papers submitted to this conference have been double-blind peer reviewed before final acceptance to the conference. Initially, abstracts were reviewed for relevance and accessibility and successful authors were invited to submit full papers. Many thanks to the reviewers who helped ensure the quality of all the submissions.

Ethics and Publication Malpractice Policy

ACIL adheres to a strict ethics and publication malpractice policy for all publications – details of which can be found here:

<http://www.academic-conferences.org/policies/ethics-policy-for-publishing-in-the-conference-proceedings-of-academic-conferences-and-publishing-international-limited/>

Self-Archiving and Paper Repositories

We actively encourage authors of papers in ACIL conference proceedings and journals to upload their published papers to university repositories and research bodies such as ResearchGate and Academic.edu. Full reference to the original publication should be provided.

Conference Proceedings

The Conference Proceedings is a book published with an ISBN and ISSN. The proceedings have been submitted to a number of accreditation, citation and indexing bodies including Thomson ISI Web of Science and Elsevier Scopus.

Author affiliation details in these proceedings have been reproduced as supplied by the authors themselves.

The Electronic version of the Conference Proceedings is available to download from <https://papers.academic-conferences.org/>

The Conference Proceedings for this year and previous years can be purchased from <http://academic-bookshop.com>

E-Book ISBN: 978-1-914587-93-1

E-Book ISSN: 2048-903X

Book version ISBN: 978-1-914587-92-4

Book Version ISSN: 2048-9021

Published by Academic Conferences International Limited

Reading, UK

www.academic-conferences.org

info@academic-conferences.org

Contents

<u>Preface</u>	viii
<u>Committee</u>	ix
<u>Biographies</u>	xi
<u>Academic papers</u>	
<i>Inclusive Leadership for Employee Workplace Well-Being in Public Organizations</i> Iman Ashmawy	1-8
<i>Sustainable leadership in practice in Hungary</i> Andrea Bencsik, Szilard Berke	9-19
<i>How are Educators Taking the Next Steps in Leadership and Entrepreneurship</i> Antonio Benitez Garcia	20-26
<i>Exploring the Influence of Cultural Intelligence on the Cross-Cultural Adaptation of Chinese Expatriate Workers: A Phenomenological Analysis</i> Vic Benuyenah (PhD), Mona Mustafa	27-34
<i>Leadership: impact on the satisfaction of Public Administration workers in Portugal</i> Manuel Sousa Pereira, Carlos Pinto Bessa, Sílvia Faria	35-45
<i>Understanding the Motivation of Young Adults to Enlist and Pursue Military Leadership Studies to Become Professional Soldiers</i> Kristýna Binková, Eva Štěpánková	45-54
<i>The Great Resignation and Intrapreneurship as a strategy to attract and retain staff in services</i> Maria Calisto	55-62
<i>Transformational Leadership fostering Open Innovation: A Dynamic Capabilities Perspective</i> Elona Cera, Zuhair Abbas	63-71
<i>Factors Influencing the Human Talent Recruitment Process in Private Companies: A Systematic Review</i> Cinthya Liliana Chalco-Chávez, Gisela Anay Fernandez-Hurtado, Franklin Cordova-Buiza	72-79
<i>Attitudes of Managers towards Ethical Programs in Slovakia</i> Simona Cincalova	80-88
<i>Digital Transformation in Family Businesses: A Systematic Literature Review and Research Agenda</i> Efthymios Daskalopoulos, Ondřej Machek	89-95
<i>Can Teal practices increase employees' work engagement?</i> Muriel Davies, Stéphanie Buisine	96-105
<i>Empowering Changemakers: The Significance of Social Entrepreneurship as a Transversal Competency</i> Teresa Dieguez, Paula Loureiro, Isabel Ferreira, Mário Basto	106-113
<i>Exploring Team Role Typologies and Taxonomies: A Systematic Literature Analysis</i> Vít Dočekal	114-120

<i>The Effectiveness of Governance Through Fiscal Policy Management in South Africa</i> Emmanuel Innocents Edoun	121-124
<i>Organisational competencies: The Essence of Emerging Resilience</i> Oroitz Elgezabal, Kristina Mirchuk, Katrin Singer-Coudoux, Maria Kretschmer	125-135
<i>Public Administration Leadership and Public Policies</i> Elisabete Fialho	136-146
<i>Neurofinance: Exploratory Analysis Stock Trader's Decision-Making Process by Real-Time Monitoring of Emotional Reactions</i> Hsin-Tzu Hsu, João Alexandre Lobo Marques	147-155
<i>Navigating Global Markets: The Strategic Role of Roadmaps in International Market Expansion</i> Urooba Jaami, Dr Hadi Abulrub	156-163
<i>Governance in family firms: how to ensure continuity</i> Shital Jayantitlal, Sílvia F. Jorge, Paulo Alcarva	164-170
<i>Crowdfunding as Entrepreneurial Funding for Investigative Journalism in Portugal</i> Natacha Jesus-Silva, Maria Dos-Santos, Nuno Baptista, Fernando Mata	171-179
<i>Intelligent Behaviour Analytics: A Novel Framework for Effective Leadership Style Transitioning</i> Stephen Johnson, Adam Crizzle, Katharine Lam, Louise Toner, Ryan Marcovich, Paul Coulter	180-185
<i>Assessing the State of Corporate Digital Transformation: Results and Implications From a Global Survey</i> Florian Kidschun, Felix Budde, Alida Soar Gomes	187-197
<i>Leadership and job satisfaction in the public healthcare sector: An empirical analysis of employees' motivations</i> Fotis Kitsios, Maria Kamariotou	198-204
<i>Technological vs. Non-Technological Mindsets: Learning From Mistakes, and Organizational Change Adaptability to Remote Work</i> Wioleta Kucharska, Dr	205-214
<i>The local labour market as a focus of place marketing</i> Lenka Labudová, doc. PhDr. Denisa Jánošová, PhD., dr. hab. Zbigniew Widera, prof. UE	215-222
<i>Determinants of risks disclosure in non-financial companies. Evidence from Portuguese capital market</i> Kátia Lemos, Filipa Pacheco	223-231
<i>Leadership and Neurosciences - The analysis of emotional arousal during decision-making processes with decision-makers exposed to acute stress</i> Joao Alexandre Lobo Marques	232-239
<i>Organizational Behavior in Small and Medium Enterprises: A Systematic Review and Future Research Agenda</i> Shesira Belén Mamani-Ildefonso, Vanessa Noemi Quispe-Martinez, Franklin Cordova-Buiza, Gisela Analy Fernandez-Hurtado	240-248

<i>Network governance in Healthcare, a systematic literature review</i>	
Arjen Maris, Stijn Hoppenbrouwers, Pascal Ravesteijn, Jos van Hillegersberg	249-257
<i>Leadership and Negotiation in Public Health Management: A Systematic Review of the Literature</i>	
Isabel C P Marques, Fernanda Nogueira, Sónia P Gonçalves, Raysa Geaquinto Rocha	256-268
<i>Social Responsibility Actions in Financial Institutions: A Systematic Review</i>	
Elizabeth Mayuri-Ramos, Geraldine Cervantes-Acuña, Angye Isabel Condori-Silva, Franklin Cordova-Buiza	269-277
<i>Social responsibility leadership in the banking sector in times of pandemic</i>	
Elizabeth Mayuri-Ramos, Pamela Liset Villanueva-Vasquez, Yuri Vanessa Conde-Beltran, Franklin Cordova-Buiza	278-285
<i>A Conceptual bridge where critical reflexivity meets the leadership warrior mystique archetype</i>	
Pumela Msweli	286-293
<i>Change Management in a South African Municipality: Can it Work?</i>	
Phatutshedzo Dapsey Mukheli, Vinessa Naidoo	294-304
<i>Increasing Task Administration Efficiency by Means of a Customizable ICT Solution</i>	
Marek Musil, František Smrčka	305-312
<i>Autonomous Systems landscape in Hungary: model and the first results of a survey</i>	
Gábor András Nick, Istvan Mezgar, Adam Szaller, Eszter Bartis, Laszlo Zahoran	313-321
<i>Leadership Development Programs Today: A Guide to Effective Strategy Execution or Fads du Jour?</i>	
Hester Nienaber, Richard McNeill	322-331
<i>Abusive Supervision and Organizational Resilience: The Role of Employees' Psychological Capital</i>	
Faith Njaramba, Prof. Daniel Skarlicki, Dr. John Olukuru	332-340
<i>Leadership in a Private Higher Education Institution in Mexico: Case Study of Tecnológico de Monterrey (Sonora Norte Campus)</i>	
Elsa Catalina Olivas Castellanos, Leonel De Gunther Delgado, Eduardo Rodríguez Álvarez, César Díaz Maldonado, Elisa Anaette Figueroa Islas	341-348
<i>From Academic Design Science Research to Start-up: Building a Digital Platform Ecosystem to Promote a Sustainable Knowledge Co-Creating Community</i>	
Ulrich Schmitt	349-358
<i>Maturity or gender? An abductive approach to study workplace meeting effectiveness</i>	
Petr Šimáček, Věra Králová, Tereza Mňuk, Pavel Král	359-369
<i>Developing Capabilities for Sustainable Business Models –Exploring Project Maturity for Innovation Processes</i>	
Torgeir Skyttermoen, Gunhild Wedum	370-379
<i>Leading transformation in an uncertain world: A case for strategic speculative design</i>	
Ingjerd J. Straand, Birgit Helene Jevnaker	380-387
<i>Diversity and sustainability as a new base for leadership</i>	
Emoke Takacs, Toon Abcouwer	388-396

<i>Spiritual Leadership and Meaningful Work: The Roles of Intrinsic Motivation and Gender</i> Fidelis Udaheureka, Prof. Fred O. Walumbwa, Dr. Ben Ngoye	397-405
<i>Corporate Social Responsibility Latin America: A Systematic Review and Future Research Agenda</i> Damari Jomara Usuriaga-Medrano, Ines Farro-Portocarrero, Gisela Fernandez-Hurtado, Franklin Cordova-Buiza	406-415
<i>Mapping Knowledge Needs of Hospital Estates and Facilities Management Teams: Insights from a Delphi Study</i> Carl-Magnus von Behr, Prof Tim Minshall, Prof John Clarkson	416-426
<i>A Leadership and Governance Stage Model (LGSM) in Digital Transformation in Data Management</i> Shuo Yan, Dr Jeff Jones	427-435
<i>Neuromarketing: Evaluating Consumer Emotions and Preferences to Improve Business Marketing Management</i> Ian Mei Zeng, João Alexandre Lobo Marques	436-444
<u>PhD Papers</u>	
<i>Assessing the impacts of a firm's reputation on the financial performance of SMEs- Evidence from selected Literature</i> Charles Randy Afful	446-454
<i>Moroccan Cultural Diplomacy: Challenges, Opportunities and Levers of a New Model of Influence and Soft Power</i> Loubna FOUINNA, Abdelmjid LAFRAM	455-462
<i>What are the drivers of competence management?</i> Lisa GAUDENS, Muriel Davies, Stephanie Buisine	463-470
<i>Servant Leadership Knowledge Structures: A Bibliometric Review</i> Ghulam Kalsoom, Roman Zámečník	471-479
<i>Unveiling the Mediating Nexus of Digital Transformation on Digital Leadership and Enterprise Performance in Manufacturing Firms</i> Kwabena Nsiah Takyi, Professor	480-487
<i>Identity of Vocational Education and Training Teacher: Pathways and Competences</i> Peter Marinič	488-494
<i>What are the relations between the characteristics and context of the board and its effectivity in decision-making?</i> Paul Morsch	495-504
<i>Pre-recruiting HR marketing for new Gen talent acquisition: the mediating role of Word of Mouth</i> Sofia Panagiotidou	505-511
<i>HR Analytics in The Commercial Aviation Sector: a literature review</i> Mr., Maria José Sousa	512-519
<i>Theoretical Research into Leadership for Sustainability</i> Ioana-Alexandra Sbîrcea	520-526

Masters Papers

Creation of a method for the adoption of digital transformation for medium enterprises in the education business in Switzerland

Mike Krey, Jan Anderegg, Pascal Burri, Matthias Röthlin, Armando Müller 528-540

Digital Health Challenges in Social Entrepreneurship: Insights and Best Practices

Teresa Dieguez, Leonardo Melo 541-548

Work in Progress Papers

Lean and Safety Management in Primary Care Centres: an Italian Case Study

Caterina Pozzan, Anna Tiso, Fabrizio Ronchi, Chiara Verbano 550-552

Lean and Safety Management: a Project to Improve the Continuity of Care for Chronic Patients

Anna Tiso, Joan Cháfer-Vilaplana, Macarena Torrego-Ellacuría, Manuel Francisco Morales Contreras, Chiara Verbano 553-556

Late Submissions

Leadership in a Military Context: The case of the Dubai Police

Mardeya Alblooshi 558-565

The Impact of CSR on the Financial Performance of Firms in Different Industries: An Example from the Financial Industry and the Healthcare Industry

Ioannis Gkliatis, Epameinondas Katsikas, Dimitrios Koufopoulos, Zeci Chen 566-576

The Impact of Leadership Style on Employee Wellbeing in Dubai Government Organizations

Amira Kamali 577-582

Mapping Military Leadership Competencies: A Systematic Literature Review

Felisberto Kiluange Fragoso da Costa, Rouco 583-592

Reassessing the Inhibiting Factors of Entrepreneurship Development in the SME Segment

John Amoah, Rebecca Kukuwa Odoom, Emmanuel Asiedu Yankey, Paul Baidoo, Benjamin Aidoo 593-598

ECMLG Preface

These proceedings represent the work of contributors to the 19th European Conference on Management Leadership and Governance (ECMLG 2023) hosted by ACI and Bayes Business School, City, University of London, UK on 23 - 24 November 2023. The Conference Chair is Dr Martin Rich from Bayes Business School, City, University of London, UK.

ECMLG is now a well-established event on the academic research calendar and now in its 19th year. The key aim remains the opportunity for participants to share ideas and meet the people who hold them. The scope of papers will ensure an interesting two days. The subjects covered illustrate the wide range of topics that fall into this important and ever-growing area of research.

The opening keynote presentation is given by Dr Jeffrey Ridley, PhD, FCG, FIIA, CIA, on the topic of *A lifetime of Management and Governance Learning: A wish for you all*. The second day of the conference Keynote presentation is given by Professor Pumela Msweli, University of South Africa, on the topic of *The Leadership Dance on a geopolitically entangled dance floor: Towards Unitive Consciousness*.

With an initial submission of 164 abstracts, after the double blind, peer review process there are 54 Academic Research papers, 11 PhD Research papers, 2 Masters Research papers and 2 work-in-progress papers published in these Conference Proceedings. These papers represent research from China, Czech Republic, Czechia, Egypt, Finland, France, Germany, Ghana, Greece, Hungary, India, Italy, Kenya, Macau, Mexico, Morocco, Netherlands, Norway, Pakistan, Peru, Poland, Portugal, Romania, Saudi Arabia, Scotland, Slovakia, South Africa, Spain, Switzerland, The Netherlands, United Arab Emirates, the UK and the USA.

We hope you enjoy the conference.

Dr Martin Rich
Bayes Business School, City, University of London
UK
November 2023

ECMLG Conference Committee

Prof Rute Abreu, Guarda Polytechnic Institute, Portugal; Dr Małgorzata Patrycja Adamska, Opole University of Technology, Poland; Prof Grigorescu Adriana, NUPSPA; IEF Romanian Academy, Romania; Dr Ghayur Ahmad, Prince Muhammad Bin Fahd University, Saudi Arabia; Dr Mohd Shahril Ahmad Razimi, Northern University of Malaysia, Malaysia; Dr Saad Aldoihi, KACST, Saudi Arabia; Dr. Morariu Alunica, "Stefan cel Mare" University of Suceava, Faculty of Economics and Public Administration, Romania; Prof Maria Ceu Alves, University of Beira Interior, Portugal; Dr Sanaullah Ansari, Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology (SZABIST), Pakistan; Prof Lina Artemenko, National technical university of Ukraine "Igor Sikorsky Kyiv Politechnical University", Ukraine; Ahmet Aykac, Theseus Business School, Lyons, France; Dr Daniel Badulescu, University of Oradea, Romania; Dr Afsaneh Bagheri, Faculty of Entrepreneurship, University of Tehran, Iran; Dr Samira Bakr, NCEEE, Egypt; Prof Joan Ballantine, Ulster University, UK; Dr Neeta Baporikar, Harold Pukewitz Graduate School of Business (HP-GSB), Namibia; Prof Dimitrios Belias, University of Thessaly, Larissa, Geopolis, Greece; Prof Andrea Bencsik, University of Pannonia, Hungary; Svein Bergum, Lillehammer University College, Norway; Dr Madeleine Block, University Bielefeld, Germany; Constantin Bratianu, Bucharest University of Economic Studies, Romania; Prof Felicjan Bylok, Technical University of Czeszochowa, Poland; Prof Kiyet Tunca Caliyurt, Trakya University - Faculty of Business Administration and Economics, Turkey; Prof Sven Carlsson, Lund University, Sweden; Dr Ondrej Castek, Faculty of Economics and Administration, Masaryk University, Czech Republic; Dr Walter Castelnovo, Università dell'Insubria, Como, Italy; Dr Francisca Castilla-Polo, University of Jaén, Spain; Prof Prasenjit Chatterjee, MCKV, India; Prof George Chiladze, The University of Georgia, Georgia; Dr Mei-Tai Chu, La Trobe University, Australia; Dr Leszek Cichobłaziński, Czeszochowa University of Technology, Poland; Simona Činčalová, College of Polytechnics Jihlava, Jihlava, Czech Republic; Prof Teresa Costa, Instituto Politécnico de Setúbal, Portugal; Dr Miguel de Castro Neto, ISEG, Universidade Nova de Lisboa, Portugal; Dr Benny M.E. De Waal, University of Applied Sciences Utrecht, The Netherlands; Andrew Deegan, University College Dublin, Ireland; Prof Sri Ranjan Dharmakeerthi Sri Ranjan, G. D., Sri Palee Campus, University of Colombo, Sri Lanka; Dr Mihela Diaconu, The Gheorghe Asachi Technical University of Iasi, Romania; Prof Philip Dover, Babson College, USA; Dr Th Economides, Neapolis University Pafos, Cyprus; Emmanuel Innocents Emmanuel Innocents, Tshwane University of Technology, South Africa; Luisa Errichiello, Italian National Research Council (CNR), Italy; Dr Mercy Escalante Ludena, Anhmebi Morumbi University, Brazil; Prof Liliana Feleaga, Academy of Economic Studies (ASE), Romania; Prof Elisabete G. S. Félix, University of Évora, Portugal; Prof Cristina Feniser, Technical University of Cluj Napoca, Romania; Prof Paula Fernandes, Polytechnic Institute of Bragança & UNIAG, Portugal; Jorge Ferreira, Nova University of Lisbon, Portugal; Dr Pedro Ferreira, University Portucalense, Portugal; Dr zair Firdaus, Mundiapolis university, Casablanca, Morocco; Dr Marzena Frankowka, University of Szczecin, Poland; Dr Andreas Gadatsch, Bonn-Rhein-Sieg University of Applied Sciences, Germany; Ass Prof Balan George, Romanian-German University, Romania; Dr Tatiana Gladkikh, The University of Winchester, UK; Dr Diogo Goes, Instituto Superior de Administração e Línguas, Portugal; Prof Paulo Gonçalves, Polytechnic Institute of Porto, ISCAP, Portugal; Dr Iwona Gorzeń-Mitka, Czeszochowa University of Technology, Faculty of Management, Poland; Prof Ken Grant, Ryerson University, Toronto, Canada; Dr Aleksandra Grobelna, Gdynia Maritime University, Poland; Prof Antonio Guerreiro, University of Evora, Portugal; Prof Niraj Gupta, Indian Institute of Corporate Affairs, India; Dr hossein hakimpour, Islamic AzaUniversity Birjand branch, Iran; Dr Mahmoud Hassanin, Ahram Canadian University, Egypt; Prof Graciete Honrado, Instituto Politécnico de Tomar, Portugal; Dr Saadia Irfan, National University of Sciences and Technology, Pakistan; Dr Dembińska Izabela, University of Szczecin, Poland; Martina Jakábová, Visions, S.R.O., Slovakia; Dr Shital Jayantilal, Universidade Portucalense, Portugal; Research Scientist Paul Kamal Chandra, Global Research Centre, Malaysia and Bangladesh, Malaysia; Dr N.V. Kavitha, St. Ann's College for Women, India; Mr. Seyed Amirhesam Khalafi, University of Houston, USA; Prof Tatiana Khvatova, Emlyon Business School, Ecully, France; Maria Knecht-Tarczewska, Wroclaw College of Management "Edukacja", Poland; Prof Jesuk Ko, Universidad Mayor de San Andres, Bolivia; Jolanta Kowal, College of Management and Wroclaw University, Poland; Prof Dr Ibrahim Krasniqi, University for Business and Technology, Kosovo; Aleksandra Kwiatkowska, College of Management and Wroclaw University, Poland; Dr Anna Lemańska-Majdzik, Czeszochowa University of Technology, Faculty of Management, Poland; Prof Kátia Lemos, School of Management - Institute Polytechnic of Cávado and Ave, Portugal; Dean Mieczysław Leniartek, Technical University in Cracow, Poland; Dr Vanessa Liu, The Hong Kong Polytechnic University, China; Prof Joao Alexandre Lobo Marques, University of Saint Joseph, Macau; Dr James Lockhart, Massey University, Palmerston North, New Zealand; Dr Harald Lothaller, University of Music and Performing Arts Graz, Austria; Prof Sam Lubbe, NWU, South Africa; Dr Camelia Luliana Lungu, Academy Of Economic Studies, Bucharest, Romania; Dr Łukasz Mach, Opole University of Technology, Poland; Paolo Magrassi, Polytechnique of Milan, Italy; Dr Arkadiusz Malkowski, Faculty of Economic, Poland; Arjen Maris, HU University of Applied Sciences, Utrecht, The

Netherlands; Bill Martin, Royal Melbourne Institute of Technology, Australia, Australia; Assc Carla Martinho, Lisbon Accounting and Business School, Polytechnic Institute of Lisbon, Portugal; Prof Nico Martins, University of South Africa, South Africa; Dr Florinda Matos, Iscte - Instituto Universitário de Lisboa, Portugal; Rija Maurizo, University of Calabria, Italy; Mr Mohd Shamsuri Md Saad, Universiti Teknikal Malaysia Melaka, Malaysia; Prof Luis Mendes, Beira Interior University, Portugal; Philip Merry, Global Leadership Academy, Singapore; Ms Hezlina Mohd Hashim, Universiti Teknologi Petronas, Malaysia; Dr Gunilla Myreteg, Örebro University School of Business, Sweden; Timothy Nichol, Liverpool Business School, LJMU, Liverpool, UK; Dr Nik Mohd Norfadzilah Nik Mohd Rashid, Universiti Sultan Zainal Abidin, UniSZA, Malaysia; Assc Sónia P. Nogueira, Polytechnic Institute of Bragança, Portugal; Dr Melao Nuno, Polytechnic Institute of Viseu, Portugal; Prof Elsa Catalina Olivas Castellanos, Tecnológico de Monterrey, Mexico; Luciana Oliveira, Polytechnic of Porto, Portugal; Ass Prof Dr Abdelnaser Omran, School of Economics, Finance and Banking, Universiti Utara Malaysia, Malaysia; Dr Roslina Othman, International Islamic University Malaysia, Kuala Lumpur, Malaysia; Dr Nayantara Padhi, Indira Gandhi National Open University, New Delhi, India; Dr Xavier Parisot, IKI-SEA, Thailand; Dr Stavros Parlalis, Frederick University, Cyprus; Prof Chintan Patel, Adani Institute of Digital Technology Management, India; Dr Shaun Pather, University of the Western Cape, South Africa; Prof Manuel Sousa Pereira, IPVC, Portugal; Dr Danilo Piaggese, Framericas, USA; Prof Rui Pimenta, P.PORTO- ESS, Portugal; Florina Pinzaru, The College of Management - NSPSPA,, Romania; Dr John Politis, Charles Darwin University, Australia; Adina Simona Popa, "Eftimie Murgu" University of Resita, Romania; Dr Cosmin Popa, The University of Agricultural Sciences and Veterinary Medicine, Romania; Prof Sheila Puffer, Northeastern University, Boston, USA; Dr Irina Purcarea, The Bucharest University of Economic Studies, Romania; Senthamil Raja, Pondicherry University, India; Dr Pascal Ravesteijn, HU University of Applied Sciences, The Netherlands; Dr Marcin Relich, University of Zielona Gora, Poland; Prof José Carlos Rouco, Universidade Lusófona, Portugal; Prof Abdel-Badeeh Salem, Ain Shams University, Cairo, Egypt; Amitrajit Sarkar, Christchurch Polytechnic Institute of Technology, New Zealand; Dr Ousanee Sawagvudcharee, Centre for the Creation of Coherent Change and Knowledge, Liverpool John Moores University, Thailand; Dr Elena Seghedini, Alexandru Ioan Cuza University, Romania; Kakoli Sen, Institute for International Management and Technology (IIIMT) Gurgaon, India; Dr Armin Shams, Sharif University of Technology, Iran; Irma Shyle, Polytechnic University of Tirana, Albania; Prof Susana Silva, School of Hospitality and Tourism, Institute Polytechnic of Porto, Portugal; Dr Raj Singh, University of Riverside, USA; Owen Skae, Rhodes Business School, Rhodes University, Grahamstown, South Africa; Dr Katarzyna Skrzyszewska, Gdynia Maritime University, Poland; Dr Roy Soh, Albukhary International University, Malaysia; Dr Lew Sook Ling, Multimedia University, Malaysia; Dr Maria Jos Sousa, Universidade Europeia, Portugal; Dr Riccardo Spinelli, Università Di Genova, Italy; Fred Strønen, Oslo Metropolitan University, Norway; John Sullivan, School of Information, University of South Florida, USA; Prof Reima Suomi, University of Turku, Finland; Dr Dalia Susniene, Kaunas University of Technology, Lithuania; Dr Hamed Taherdoost, Hamta Group | Hamta Business Solution Sdn Bhd, Malaysia; Dr Safdar Husain Tahir, Govt. College University Faisalabad, Pakistan; Ramayah Thurasamy, Universiti Sains Malaysia, Malaysia; Dr Xuemei Tian, Swinburne University, Australia; Dr Piotr Towski, Czestochowa University of Technology, Poland; Dr Savvas Trichas, Open University Cyprus, Cyprus; Prof Roberta Troisi, University of Salerno, Italia; Dr Hab Miroslawa Wawrzak- Chodaczek, Institute of Pedagogy, Wrocław University, Poland; Dr Lugkana Worasinchai, Bangkok University, Thailand; Dr Zulnaidi Yaacob, Universiti Sains Malaysia, Malaysia; Tuan Yu, Kent Business School, University of Kent, Canterbury, UK; Dr Monica Zaharie, Babes-Bolyai University, Romania; Asst Prof Nurul Mohammad Zayed, Daffodil International University, Bangladesh; Dr Justyna Żywiółek, Czestochowa University of Technology, Poland.

Biographies

Conference Chair

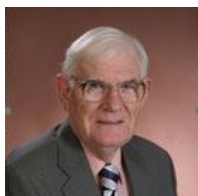


Dr Martin Rich is Associate Dean for the Undergraduate Programme at Bayes Business School, City, University of London. His interests centre around how best to educate students for an uncertain and unpredictable world in the future, and at a broader level the changing role of management education and the requirements placed on it.

Keynote Speakers



Professor Pumela Msweli is CEO and Executive Dean in the Graduate School of Business Leadership at the University of South Africa. She obtained her PhD from the University of Exeter; an MPhil in Development Finance from Stellenbosch University. Msweli is a Certified Integral Coach, and an accomplished scholar with extensive leadership experience across multiple geopolitical settings.



Jeffrey Ridley has been a visiting professor of auditing and corporate governance since 1991, with now visiting chairs at three universities in the United Kingdom. – the first at London South Bank University since 1991, teaching and researching auditing, sustainable assurance and governance, followed by Birmingham City University and in 2013 Lincoln International Business school. Before his now 32 year academic career he worked in two major US global manufacturing and distribution companies for thirty years as an internal auditor, accountant and senior manager, following ten years working as a government auditor in Nigeria, West Africa. He has been a member of the now Chartered Governance Institute since 1967 and was the first President of The Chartered Institute of Internal Auditors-UK 1975, affiliated with The Global Institute of Internal Auditors Inc. USA. He has published many research papers and articles on auditing and governance and authored three books and many Chapters in other books. His first in 1998, second in 2008 and third book on creativity and innovation in auditing was published in 2018. He has presented papers at many conferences and participated in seminars on all aspects of governance in a variety of organisations. His current interest and research is in sustainability reporting, board effectiveness across all sectors, audit committees and still professional internal auditing. This year he has been awarded a Doctorate of Philosophy in Accounting by examination at the University of Lincoln. His Thesis – *From Good Governance to Sustainability (ESG)Reporting*.

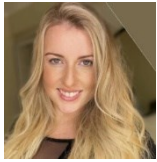
Mini-Track Chairs



Prof Teresa Dieguez, Specialist on Strategy and Entrepreneurship at Polytechnic Institute of Cávado and Ave (IPCA), Portugal. After her studies in Economics, Teresa worked for several years in the automotive industry. She founded her first company in 1995 and in 2007 she took a Master's in Innovation and Technological Transfer. Nowadays Teresa is a professor and a co-promotor of different businesses and activities. She is a Social Judge, and she is taking her PhD in Social Sustainability and Development. She believes that innovation is a good way to improve sustainable development.



Prof Isabel Ferreira, PhD in Information Technologies and Systems from the University of Minho, Portugal. Research collaborator in the group Information Systems and Technologies for the Transformation of Organizations and Society (ISTTOS), of the Algoritmi Center, University of Minho. Member of the organization of several national academic seminars and conferences, and reviewer of several international conferences and journals. She belongs to a choir, o Coro En'Encanto.



Dr Elisabete Fialho is a Public service worker in presidency of the council of ministers. Degree in management. Master in public administration and frequency in Public Policy PhD.



Ovidiu Gavrilovici PhD in Psychology, Associate professor at Alexandru Ioan Cuza University from Iasi, Romania. He is developing a lot of national and international projects; Co-chair of ICAPES international conference; International Narrative Approach Expert.. He wrote Books chapters and articles on his main research fields – Psychological and Educational Counseling and Narrative Approach.



Dr Tatiana Gladkikh is Lecturer in Management at the University of Aberdeen Business School. As an academic and consultant, she has worked the UK, Russia, Europe and the Middle East. Her research is focussed on leadership, cross-cultural issues in the global business environment and luxury end of tourism. Her latest publication is *Luxury Yachting: Perspectives on Tourism, Practice and Context* (Palgrave Macmillan, 2022) Dr Gladkikh is an associate editor of *The Journal of Management Development*. She is a Senior Fellow of the Higher Education Academy (SFHEA) and a Member of the Chartered Institute of Linguists (MCIL).



Prof Paula Loureiro, PhD student in Business Sciences, with several publications in the areas of Human Resources Management and Organizational Behavior. Paula has been teaching in Higher Education since 1998, having taught various curricular units in management for undergraduate and master's degree courses. Experience in coordinating disciplinary areas of the Management Department. Research interests: Career Management, Skills management, Equal opportunities and diversity management.



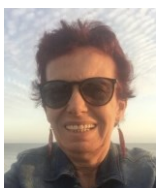
Elena Seghedini, PhD in Ethics from 2010 with a Thesis on Professional Ethics of teachers; member of the teaching and research staff of the Education Sciences Department at Alexandru Ioan Cuza University from Iasi in Romania. Her main research interest in which she wrote books and articles are Critical and Reflective Thinking on Teachers Education, Ethics in Education, Educational Leadership.



Dr Maria José Sousa is Pro-Rector for the Development of Distance Learning and professor and researcher at ISCTE/Instituto Universitário de Lisboa. She was a Senior Researcher at the GEE of the Ministry of Economy, responsible for Innovation, Research and Entrepreneurship Policies, and Knowledge and Skills Manager at AMA, IP. She has co-authored more than 100 scientific articles and book chapters and is a guest editor for more than 5 special editions of Elsevier and Springer.



Dr Joao Alexandre Lobo Marques is Associate Professor - University of Saint Joseph/USJ, Macau SAR, China. Head of the Laboratory of Applied Neurosciences. Head of the Department of Business Administration. Coordinator for the MBA. Research Coordinator. Visiting Associate Professor Chinese Academy of Sciences (CAS) - Shenzhen Institutes of Advanced Technologies (SIAT). Member of the Board of Advisors - Master in Global Marketing Management - Boston University Metropolitan College. Author of 9 books. Research interests: Applied Neurosciences, Neuromarketing, Artificial Intelligence, Data Science, Big Data, Business Analytics and Applied Mathematics.



Dr Ana Maria da Palma Moreira, PhD in Social and Organizational Psychology, done at ISPA-Instituto Universitário. Professor of Curricular Units of Human Factors I, Human factor II, Organisational Behaviour I, Organizational Psychology I, Organizational Psychology II, Statistical Analysis I and Statistical Analysis II at ISPA-Instituto Universitário, in Lisbon.



Dr Fred H. Strønen is associate professor at Oslo Business School, OsloMet - Oslo Metropolitan University. He has a Ph.D. within strategy and organization from Copenhagen Business School and Norwegian School of Management, and he likes teaching. Strønen has published in various international journal on topics as business strategy, digitalization, dynamic capabilities, strategic leadership, innovation, learning and as well as industry analysis. Strønen has extensive experience in working with strategic and managerial development, for larger public and private organizations in Norway. In his leisure time Strønen enjoys biking and skiing.

Biographies of Contributing Authors

Toon Abcouwer was lecturer at the University of Amsterdam for almost 40 years, co-establisher of the Amsterdam Information management model and the Adaptive Cycle of Resilience model. Co-author of books about Adaptive Information Management and organisational change. Recent research focuses on sustainability, stewardship and renewing health care systems.

Charles Randy Afful, Second-year PhD student of Business Economics and Management Studies at Tomas Bata University in Zlin, with a research interest in Strategic Management. I have novice experience in research and have one journal publication and two conference papers.

Benjamin Aidoo is a diligent Procurement Officer with over a decade of experience. His keen eye for cost-effective sourcing and negotiating skills has consistently saved his organizations substantial resources. Aidoo is dedicated to ensuring efficient procurement processes, fostering supplier relationships, and optimizing supply chains for seamless operations

Ndidi Airhihen: A research student at the University of Portsmouth. My current research interests are in developing economies, sustainable development, ethics, multinational enterprises, stakeholder management and leadership.

Emmanuel Aseidu Yankey is a dynamic leader in the construction industry, currently excelling as a Branch Manager. With a relentless passion for innovation and a track record of transforming operations, Emmanuel Asiedu Yankey embodies entrepreneurial spirit. His journey from the ground up to branch management exemplifies dedication, expertise, and a vision for the future of construction.

Dr. Balqees Naser Ahmed is an Assistant Professor at Zayed University's College of Business. She received her doctorate degree DBA in Leadership Succession Planning in 2017 from Southern Cross University, Australia. Her teaching and research areas are leadership, management, human resource management, organizational behavior and quality services.

Iman Karam I.M. Ashmawy is an Assistant Professor of Public Administration at the Faculty of Economics and Political Science- Cairo University. She published and reviewed various studies on local government, organizational behavior, human resources management, and ethics in public administration as well as attended numerous conferences and workshops on the same topics.

Paul Baidoo is a dynamic force in the construction industry. With a relentless drive for innovation and success, he has risen through the ranks to become a thriving Branch Manager. His journey from the ground up is a testament to his unwavering commitment to excellence, making him a standout entrepreneur in construction.

Andrea Bencsik is a professor at Pannon University in Hungary and at J. Selye University in Slovakia. She is doing research in the fields of knowledge- change- human resources management and teaching these disciplines at the same time. She is the author of a number of scientific publications and a member of some international scientific committees.

Dr Antonio Benitez is a professor of Corporate Entrepreneurship at XJTLU- Liverpool University. His main topics of interests are Entrepreneurship, Business Marketing, and Tourism, which he has taught and delivered in different countries, currently working and living in China.

Dr. Vic Benuyenah: Associate Editor, Journal of Research in Innovative Teaching & Learning and an HRM and Labor Markets studies expert. Research covers HR theory, higher education, and labour efficiency. Has a PhD (University of London) and Public Policy Economics Certificate (Oxford University). Currently teaches in the MSc HRM program at the Birmingham Business School, University of Birmingham.

Carlos Pinto Bessa has a degree and a master's degree in marketing management from the Portuguese Institute of Marketing Administration. Postgraduate in Digital Marketing and E-Commerce by Instituto Superior de Entre Douro e Vouga and PhD in Business Economics and Finance from the Rey Juan Carlos University in Madrid.

Felix Budde, M. Sc., born 1996, studied mechanical engineering and production technology with a focus on industrial management in Bremen. Since 2021, he has been working at the Fraunhofer Institute for Production Systems and Design Technology IPK in Berlin as a research associate in the business unit Corporate Management on concepts of sustainable corporate development.

Maria de Lurdes Calisto holds a PhD in Management, is an Assistant Professor at Estoril Higher Institute for Tourism and Hotel Studies, and is a CITUR - Center for Applied Research in Tourism member. She develops research within Management and Business Studies, particularly in tourism, hospitality, and other service businesses.

Elona Čera currently pursuing PhD studies at Tomas Bata University in Zlin in the field of High-Performing Working Systems and Open Innovation, in high performing manufacturing SMEs in Czech Republic. My main research areas are HRM, open innovation, and knowledge management, virtual work.

Geraldine Cervantes-Acuña Geraldine Cervantes-Acuña is a student at the Faculty of Business, Banking Administration and Finance of the Universidad Privada del Norte in Lima, Peru. She with computer skills.

Roila (Eleftheria) Christakou PhD, Panteion University, MA Management, City University, BA French Language & Literature, National and Kapodistrian University of Athens. Working as Head of Business Planning, Digital Banking, Eurobank. Previously worked as Communications Manager, Chairman of Eurobank, Communications Officer, ESM, Luxembourg. Communications specialist with experience in the EU, Banking, Government and Entrepreneurial sector.

Simona Činčalová received PhD degree from the University of Pardubice, Czech Republic in 2018, in Management. She is a lecturer and a researcher in the Department of Economic Studies, College of Polytechnics Jihlava. She is interested in corporate social responsibility (CSR), customer satisfaction and loyalty, gender gap and managerial ethics.

Angye Isabel Condori-Silva is a student at the Faculty of Business, Banking Administration and Finance of the Universidad Privada del Norte in Lima, Peru.

Professor Adam Crizzle, Birmingham City University. Founder and core developer of the Intelligent Behaviour Analytics Framework (IBA).

Felisberto Kiluange Costa is an officer of the Angolan Army working in the field of education and training. Is doing is PhD studies at Lusófona University, Lisbon. He is a revisor of journals in the field of social sciences. His main research areas are leadership, military leadership competencies, curriculum, ubuntu African philosophy and high education.

Efthymios Daskalopoulos is a PhD candidate at the Faculty of Business Administration, Department of Strategy in the Prague University of Economics and Business. He holds a MEng from the National Technical University in Athens and an MBA from Imperial College London. His main research area is family business and digital transformation.

Muriel Davies is Researcher Lecturer at LINEACT CESI. She worked 13 years long in industry as manager before reorienting towards higher education. Her main research topic is organizational culture.

António Pimenta de Brito (MBA) is an assistant professor of management at ESCAD-IP Luso and a Ph.D. candidate in management from ISCTE-IUL (Portugal). He has 20 years of practice in companies, namely in the

training, consulting, and supply chain management areas, including commercial aviation. He has recently decided to devote his professional life to teaching and research in academia.

Dr Teresa Dieguez is an Innovation, Entrepreneurship and Strategy professor at the Polytechnic Institute of Cávado and Ave (IPCA), Portugal. She worked for 26 years in the automotive industry and founded her first company in 1995. She is also a Social Judge and is taking her PhD in Social Sustainability and Development.

Vít Dočekal is an Assistant Professor at the Department of Sociology, Andragogy, and Cultural Anthropology at the Faculty of Arts, Palacký University Olomouc. His research interests encompass work teams, experiential learning, and the development of soft and managerial skills.

Dr Emmanuel I Edoun is a Senior Lecturer at Tshwane School for Business and Society at the Tshwane University of Technology in South Africa. He Holds a PhD from the University of Witwatersrand in Johannesburg South Africa. His focus areas include Public Sector Economics and Management, Service Delivery.

Gisela Analy Fernandez-Hurtado has a degree in administration and international business and a bachelor's degree in international relations, a master's degree in business management at ESAN university, Hurtado has extensive experience in the research sector in international book publishing and is a specialist in the commercial area and foreign relations in public and private companies.

lisabete Fialho is a Public service worker in presidency of the council of ministers. Fialho has a Degree in management and a Masters in public administration and frequency in Public Policy PhD. Academic profile: <https://sciprofiles.com/profile/author/cjF4KzIWNEFqTmNBV3ZtbnlrRHJ4aUhOcURJNmF4NGYvQkFpakVrMUvNMDO=>

Loubna Fouinna is a PhD researcher at School of Information Sciences (ESI) in Rabat, Morocco. She holds a Master's degree in Governance, Human Resources Management and Skills Engineering from University Mohammed V of Rabat. Her areas of main interests are cultural diplomacy and soft power, Information and Communication Technologies and Human Resources Management.

Clara Gallego-Sosa is a Ph.D. student at the University of Extremadura, Spain. Her research areas include gender equality, corporate governance and sustainable management, specifically in the tourism sector. One of her recent research streams examines women's leaderships, focusing on the path women follow to reach top positions and the importance of mentorship

Lisa Gaudens is a PHD candidate in CESI Lineact and Human Resources counsellor for 10 years. I'am 32 years old and live in the south of France and work in Paris.

Hsin-Tzu Hsu, USJ, Macau MBA Program 2023 graduate. 14 years of experience in the manufacturing, R&D, and customer relations fields in the Asia Pacific Region. Served in a senior management role in the shoe industry for more than 6 years.

Urooba Jaami is a University of Warwick postgraduate alumni who completed her MSc in International Technology Management in 2022. During her studies, she conducted research for her dissertation, focusing on the significance of roadmaps in market expansion. Today, Urooba works as a Data Product Owner in the IT industry.

Dr Harri Jalonen: Professor of social and health management (University of Vaasa, Finland). Received his PhD in knowledge management (Tampere University of Technology, 2007). Research interest includes knowledge and ignorance management, complexity thinking, systemic change, value (co)creation, and public service organizations. Published around 100 scientific articles (incl. Public Management Review and Public Administration Review), books or book chapters (Routledge, Springer).

Shital Jayantilal is Associate Professor at Universidade Portucalense, Porto, Portugal, where she heads the Department of Economics and Management. Her main topics of research are Main research interests: Family Firms; Strategy; and Game Theory, and has published in various international journals. Having been awarded

the 2021- Schulze Publication award by Entrepreneurship and Innovation Exchange and Family Business editorial teams.

Birgit Helene Jevnaker is a professor (em.) in Innovation and Economic Organization at BI Norwegian Business School, Dep of Leadership and Organisation Behaviour. Birgit holds a Ph.D. on designer and enterprise relations from BI. She has published widely within strategic design, innovation, knowledge management, entrepreneurship, and organization development, and has developed awarded leadership executive programs.

Makabongwe Khanyile is currently heading marketing at the University of South Africa. Khanyile holds a PhD from the University of Cape Town. His research interest areas are stakeholder management, marketing, higher education, new managerialism, cooperativism and governance. Khanyile has presented at various academic international conferences and published papers in peer-reviewed academic journals.

Takyi Kwabena Nsiah is a PhD finance candidate at Tomas Bata University, specializing in digital finance, financial economics, and climate change. With co-authored articles in high-indexed journals, he aims to bridge academia and industry, exploring the transformative potential of digital finance while addressing climate-related risks and promoting sustainability in financial systems.

Ghulam Kalsoom, She is a Ph.D. Candidate at Faculty of Management and Economics at Tomas Bata University in Zlin, Czech Republic, Europe. Her main area of research is on Servant leadership, Corporate Social Responsibility and Socially Responsible HRM. She published two research papers in International Conference held in Czech Republic.

Wioleta Kucharska holds a position as an Associate Professor at the Faculty of Management and Economics of the Gdansk TECH, Gdansk University of Technology, Fahrenheit Universities Union, Poland. She authored 71 peer-reviewed studies published with Wiley, Springer, Taylor & Francis, Emerald, Elsevier, IGI Global, and Routledge. She reviews international journals (70 confirmed by Publons), the National Polish Science Center (NCN), and the US Fulbright Program. Wioleta Kucharska was recently involved in such topics as tacit knowledge, personal branding of knowledge workers, and company culture of knowledge, learning, and collaboration. Along with scientific passion and achievements, she has 12 years of managerial experience; therefore, her works next to theoretical foundations actively refer to management practice.

Rebecca Kukuwa Odoom is a distinguished entrepreneur concurrently pursuing her master's degree at Takoradi Technical University in Entrepreneurship and innovation. She is the founder of VersaLink Ghana. Rebecca holds a BSc in Management from University of Cape Coast and an HND in Marketing from Takoradi Technical University. Her academic focus centers on SME Development, Marketing, and Business Consultancy, making her a prominent figure in the realm of entrepreneurship and innovation.

Maria Kretschmer studied Business Administration at the Humboldt University of Berlin (B.Sc.) and Philosophy of Knowledge and Science at the Technical University Berlin (M.A.). Ms. Kretschmer works as researcher and management consultant in the Department of Business Excellence Methods at the Fraunhofer-Institute for Production Systems and Design Technology IPK in Berlin.

Katharine Lam, Senior Lecturer in Piano, Royal Birmingham Conservatoire. Core developer of the IBA Performing with Confidence Programme for Musicians.

Kátia Lemos is a professor of financial accounting at the Polytechnic Institute of Cávado and Ave (IPCA). She received her PhD in Business sciences (Accounting) from Santiago de Compostela University in 2011. Author of several articles published in scientific books and journals. Her main research areas are Financial and non-financial reporting; CSR/sustainability reporting.

Dr Emily Ma is a Professor at the School of Hospitality & Tourism Management, at the University of Surrey, UK. Her research areas include organizational behaviour and women in leadership. One of her most recent research streams looks at how mentorship could help women reach management and leadership positions.

Doctor Lenka Labudová works as a assistant of professor at the Faculty of Mass Media Communication. In her pedagogical, scientific, and publishing activities, her primary focus is in the area of regional marketing and

marketing communication. She publishes in both domestic and international spheres with a focus on the mentioned areas. She is also a co-researcher on several scientific projects.

João Alexandre Lobo Marques PhD in engineering from the Federal University of Ceara, Brazil with exchange period at Trium Analysis Online, GmBH, Munich. Post Doctorate and Honorary Research Fellow from the University of Leicester. He is the Associate Professor, Head of the Laboratory of Applied Neurosciences and Head of the Department of Business Administration at the University of Saint Joseph/USJ, Macau.

Dr Peter Marinič is a PhD student of Education Sciences at Faculty of Arts Masaryk University, focusing on the teacher's identity. He received his 1st PhD in Business Economy and Management in 2016. He works as an assistant professor at Faculty of Education Masaryk University where he teaches VET teachers in economics and branch didactics.

Arjen Maris is a lecturer/researcher in the field of process and information management since 2015. He previously worked in the long-term healthcare domain for more than ten years. As a PhD candidate, he is affiliated with the research groups *Process Innovation and Information Systems* and *Industrial Engineering & Business Information Systems*.

Isabel Cristina Panziera Marques, PhD in Management from the University of Beira Interior - UBI (Portugal). Guest Assistant Professor at the Higher Institute of Social and Political Sciences of the University of Lisbon. Executive Coordinator of the Masters and PhD in Human Resources Development Policies..<https://orcid.org/0000-0002-3407-2673>

Leonardo Melo has a great experience in IT, Health IT, Life Science and medtech (medical devices and diagnostics). Leonard has a Master's degree in communication systems (Brazil), an MBA in Marketing (Brazil) and is taking a Master's degree in Management for Executives. (Portugal). He is the CEO of an innovative IT Company.

Ana Moreira; PhD in Social and Organizational Psychology, done at ISPA-Instituto Universitário. Professor of Curricular Units of Human Factors I, Human factor II, Organisational Behaviour I, Organizational Psychology I, Organizational Psychology II, Statistical Analysis I and Statistical Analysis II at ISPA-Instituto Universitário, in Lisbon. Academic Profiles: Ciência ID: E61C-D6B7-1217; <https://orcid.org/0000-0002-4799-874X> , <https://www.scopus.com/authid/detail.uri?authorId=57224107907>

Paul Morsch studied computer science at the university, HR at the university of applied sciences and did an MBA. for a long time he worked as a consultant and facilitated boards in their strategy development. In this field he has started a PhD research (the decision-making process of boards).

Kristina Mirchuk is a versatile professional with a wealth of experience in education, talent management, and knowledge management. With a background in teaching, coaching and leadership roles, she has excelled in multicultural environments. Kristina founded GEIST Consultancy in 2019, focusing on competence based knowledge management for organizations. Her expertise lies in harnessing the potential of intangible assets and enhancing organizational performance. As a member of several knowledge management associations, Kristina is dedicated to advancing knowledge management practices.

Marek Musil graduated from Informatics and Computer Technology at the Faculty of Applied Sciences of University of West Bohemia in Pilsen. He is a specialist in programming, GUI application design, mobile application design, Artificial Intelligence, and recognition. He works at the Department of Technical Studies of the College of Polytechnics Jihlava.

Prof Vannessa Naidoo holds a BCom degree, a Master of Business Leadership, a Postgraduate degree in Teaching (Finland), and a Doctorate in Leadership and Performance Change. Vinessa is a renowned academic in South Africa and is currently with the Tshwane School for Business and Society (TSB). Prof Naidoo is also an accomplished entrepreneur in South Africa.

Dr. Gábor Nick is a research fellow at Institute for Computer Science and Control and also Deputy Managing Director at EPIC Innolabs Ltd. He received his PhD in regional and economic sciences from Széchenyi István

University. His main research areas are industrial digitalization and maturity models. Publications mostly contributed to the Hungarian industry 4.0 ecosystem.

Hester Nienaber (Doctor of Commerce, Unisa) is retired, but still active, professor at Unisa and a visiting research scholar at NAU, USA. Her research theme is 'shaping a competitive advantage by unlocking human competence'. She publishes mainly in peer reviewed outlets, serves as peer reviewer for academic papers, and winner of several awards.

Faith Njaramba is a PhD candidate at Strathmore University Business School, Kenya. Her field is Organizational Behaviour. Faith won best research pitch from Africa and was a global semi-finalist in the 2022 Global Pitching Research Competition (IGPRC) held in Australia. Her research interest is on leadership styles and resilience of small and medium sized firms.

Dr. Catalina Olivas is a Postdoctoral researcher at the Institute for the Future of Education's Writing Lab at Tecnologico de Monterrey in Mexico. She holds a Ph.D. in Education Innovation from the University of Sonora and is currently researching leadership in higher education, science education, and knowledge management

Sofia Panagiotidou is a PhD candidate at the Business Administration Department at the University of Macedonia, in Thessaloniki, Greece. She is an experienced career counselor with Master degrees in Environmental Education, Communication and Didactics and graduate in Philology and Business Administration. Her current research focuses on Employer Branding strategies especially in pre-recruitment stages and practices.

Caterina Pozzan is a second-year Ph.D. student in 'Management Engineering and Real Estate Economics' at the University of Padova (Italy), where she obtained a Master's degree in Management Engineering in 2021. Her doctoral research focuses on the implementation of Lean and Safety Management in Primary Care and Ambulatory Care.

Ioana Alexandra Sbircea I studied at the Polytechnic University of Bucharest for a bachelor's degree at the Faculty of Entrepreneurship, Engineering and Business Management. I did my master's degree at the Faculty of Entrepreneurship, Engineering and Business Management, in Management of Digital Enterprises. I was an Erasmus student in Portugal in Porto between 2015-2016. Now I am a PhD student in the 3rd year at the same faculty, my PhD topic is Research on Supply Chain Management and Performance Organization in the context of technological advancement. I lived in London in 2019 and worked at Decathlon Canada Water, now I work at P&G and I am Campus Sustainability Leader.

Ulrich Schmitt is Professor Extraordinaire for Knowledge Management at the University of Stellenbosch Business School. His career covers IT and management consulting, professorships, and academic management positions in Europe and Southern Africa based on an interdisciplinary education. He also founded Knowcations®, a 2022-start-up in Mauritius, aiming to build a Community Platform for Knowledge Co-Creation.

Elena Seghedin, member of the teaching and research staff of Psychology and Education Sciences from Alexandru Ioan Cuza University from Iasi, Romania. With a PhD in Teaching Ethics, her research interests are connected with: Teacher Education, Teacher Leadership and New Approaches in Formal Learning and Teaching, including Ethical Issues - Teaching Perspectives under Professional Ethics Domain, Metacognition Approaches and Creative Teaching.

Petr Simacek, Petr is a second-year doctoral student at the Faculty of Management (Prague University of Economics and Business). His research mainly covers the field of workplace meetings and focuses on quantitative research methods.

Natacha Silva, PhD in Applied Economics, with a degree in Management, from the University of Santiago de Compostela. Professor at a Higher Education institution since 2012 and, cumulatively, holds positions in Management, she is the Quality and Infrastructure Manager. Currently, she is an Integrated Member of the REMIT - Research on Economics Management and Information Technologies.

Torgeir Skyttermoen is an Associate Professor in Project Management and Dean of the School of Management at Oslo Business School, Oslo Metropolitan University. He has published several books on Project Management. He has also been a partner in a research programme on Sustainability by Design.

Manuel Sousa Pereira PhD in Communication Sciences. He is an Assistant Professor at the Polytechnic Institute of Viana do Castelo. Reviewer of several scientific journals, interacting with more than twenty co-authored researchers. He has been an interdisciplinary researcher in the areas of Strategic Communication, Marketing, Brand Management, Entrepreneurship, Digital Marketing and organizational leadership.

Ing. Eva Štěpánková, Ph.D. is an assistant professor of the Department of Resources Management at the Faculty of Military Leadership, University of Defence. She received her PhD from Faculty of Economics and Administration of Masaryk University in 2013. Her main research areas are strategic management, analytical tools in management and soft managerial skills.

Ingjerd J. Straand is a special advisor at Stavanger Smart City working with digitalisation and innovation projects. She has 17 years' experience, mainly from IT consulting, working with strategic user-centred digital transformation processes. She holds a MSc in Business Administration and is currently undertaking a PhD-project at the University of Stavanger titled "Designing Digital Intervention".

Emőke Takács, co-author of books about Adaptive Information Management, researcher and co-developer of the Adaptive Cycle of Resilience. Develops and delivers trainings, educational materials for over 25 years. She has dealt with organisational challenges as a manager for over a decade, while in the past decade deeply involved in environmental and sustainability projects

Dr Simon Taylor is Project Manager for the Regional and Local Economic Development project based at the Graduate School of Business and Leadership – UKZN, Durban South Africa. He has extensive experience in Higher Education and has worked in South Africa and a number of African countries.

Anna Tiso is a third-year PhD student at the Department of Management and Engineering of the University of Padova, Italy. She holds a master's degree in Management Engineering from the University of Padova. Her research interests centre around healthcare operations management, with a focus on health lean management.

Fidelis F. Udahemuka is a Business and Management Ph.D. candidate at Strathmore Business School, Strathmore University, Nairobi –Kenya, and holder of a Master of Business Administration (MBA). He has been an adjunct lecturer in Leadership and Management at Hekima University College, A Constituent College of the Catholic University of Eastern Africa, Kenya, since 2013.

Damari Jomara Usuriaga-Medrano is a student of the 9th cycle of the administration career, belonging to the Universidad Privada del Norte, with certified participation in the school of student leaders of the UPN, in the different areas, as an employability counselor, 2 years ago, she holds the position of administrator in a family business called "Boutique O & R".

Pamela Liset Villanueva-Vasquez is a student at the Business School of Banking and Financial Business Administration at the Universidad Privada del Norte in Lima, Peru.

Carl-Magnus von Behr is a doctoral researcher at the Institute for Manufacturing (IfM), University of Cambridge, investigating how to improve knowledge sharing among NHS Estates and Facilities Management departments. He holds an M.Phil. in Industrial Systems, Manufacture and Management from Cambridge and a B.Sc. in Industrial Engineering and Management from the Technical University Berlin, Germany.

Shuo Yan is a PhD candidate in the major of Supply Chain at the University of Warwick, UK. Her main research areas are the assessment of digital transformation in the Supply Chain, and mental health and well-being at the workplace in Social Science.

Ian Mei Zeng completed master's degree in international marketing at the University of Birmingham. PhD Candidate in business administration at the University of Saint Joseph, Macau in 2021 until present and works in the Laboratory of Applied Neuroscience at University of Saint Joseph as Research Assistant since December 2021.

Inclusive Leadership for Employee Workplace Well-Being in Public Organizations

Iman Karam Ashmawy

Department of Public Administration, Faculty of Economics and Political Science, Cairo University, Giza, Egypt

imanka88@cu.edu.eg

Abstract: Various public organizations realize that promoting workplace well-being is crucial for the effectiveness of their employees. It is believed that when creating an environment where employees feel welcomed, are treated fairly, and their contributions are appreciated, they will be happy and work better. Therefore, diversity management has gained increased attention. However, since diversity does not necessarily mean inclusion in decision-making and the appreciation of employee differences and input, a growing body of research has advocated the adoption of positive relational leadership styles, such as inclusive leadership. Inclusive leadership embraces employee differences, manages diversity, and recognizes employee input. Hence this paper investigates how inclusive leadership correlates to employee workplace well-being in public organizations. Relying on quantitative analysis, a questionnaire was distributed to N= 234 Egyptian local government officials who demonstrated diversity in gender and educational levels. The data collected were analyzed using SPSS version 20. The study's conclusions reveal that inclusive leadership has an uneven influence on employee workplace well-being based on educational levels. The correlation was strongest among the least educated and weakest among the highly educated. Gender, on the other hand, did not show any significant difference in the correlation between inclusive leadership and workplace well-being and hence, was not considered for further analysis. Moreover, the traits of inclusive leadership have different effects on employee workplace well-being based on their educational levels. For the least educated, leadership accessibility had the greatest influence on employee workplace well-being, while for the highly educated, leadership openness had the strongest influence. In conclusion, this paper highlights the importance of inclusive leadership in promoting employee workplace well-being in public organizations, especially for marginalized groups who may feel excluded in the workplace. Additionally, public organizations should recognize that inclusive leadership practices should be tailored to meet the diverse needs of employees based on their educational levels.

Keywords: Inclusive leadership, Workplace well-being, Availability, Accessibility, Openness

1. Introduction

There is a growing interest among public organizations in managing diversity and caring for employees' well-being (Ashikali et al, 2021; Cheung, 2016; de Souza and Gama, 2020; Gallegos, 2014; Pawar, 2016; Pradhan and Hati, 2019; Sung, 2021). The belief is that when employees are treated fairly, and their contributions are appreciated, they will be more effective. Nonetheless, research on diversity has produced mixed results (Li, 2021). One stream of studies highlights how diversity encourages creativity and innovation, while another demonstrates that diversity can lead to interpersonal conflict and reduced social cohesion (Mendelsohn, 2021). Additionally, diversity without inclusion is ineffective (Cohen, 2022).

Thus, positive relational leadership styles were emphasized. Based on empirical research, inclusive leadership embraces employee differences, manages diversity, and recognizes employee input (Mor Barak, 2015), especially among marginalized groups (Shore and Chung, 2022). Hence, this paper raises the question: to what extent is inclusive leadership in public organizations correlated to employee well-being?

The importance of this paper is threefold. Firstly, it focuses on a stream of literature that supports the adoption of positive relational leadership styles, such as inclusive leadership, in public organizations and outlines its benefits for employees. Secondly, this paper seeks to offer an in-depth analysis of how inclusive leadership correlates to employee workplace well-being. Lastly, this study examines whether all employees, regardless of their differences, will equally feel supported.

2. Inclusive Leadership

Inclusive leadership is defined as the words and actions that a leader uses to appreciate and encourage others' contributions (Buskirk, 2020; Tran and Choi, 2019). It recognizes and values the differences among the employees, as well as encourages their full participation in the organization and decision-making (Cohen, 2022; Mor Barak, 2015). It listens to the employees' needs and expectations and supports their inputs and outputs (Bannay et al., 2020).

There are three important traits of inclusive leadership; availability, accessibility, and openness; that are widely used as sub-scales when measuring inclusive leadership (Ahmed et al, 2021; Buskirk, 2020; Choi et al, 2017; Jin

et al, 2017; Li, 2021; Zhao et al, 2020). *Availability* indicates the extent to which the leader is present to his employees. *Accessibility* is the extent to which the employees can reach the leader anytime. Whereas *openness* refers to the extent the leader encourages the employees to offer ideas and opinions (Sung, 2021). Hence, inclusive leadership creates a safe working environment for different opinions and perspectives while promoting justice based on a sense of uniqueness and belongingness (Cohen, 2022; Javed et al, 2019; Korkmaz et al, 2022; Mor Barak, 2015).

Numerous empirical studies have highlighted the positive outcomes of inclusive leadership. For individuals, inclusive leadership has a positive impact on employee commitment, performance, satisfaction (Sung, 2021; Xiaotao et al, 2018), psychological safety (Javed et al, 2019; Randel et al, 2018; Zhao et al, 2020), work engagement (Bao et al, 2022; Sprouse, 2021), retention and adaptive behavior (Qurrahtulain et al, 2022), innovative work behavior (Javed et al, 2019; Mendelsohn, 2021; Zhong et al, 2022), and psychological well-being (Ahmed et al, 2021). For groups, inclusive leadership has a positive influence on collective voice behavior (Chen et al, 2021; Jolly and Lee, 2021), and team performance (Buskirk, 2020; Jolly and Lee, 2021; Ye et al, 2019). For organizations, inclusive leadership has a positive correlation with organizational citizenship behavior (Tran and Choi, 2019; Younas et al, 2021), and organizational commitment (Buskirk, 2020; Mendelsohn, 2021).

Nevertheless, little empirical research suggests that inclusive leadership might encourage prosocial rule-breaking (Wang and Shi, 2021) and confusion when diversity is not well managed (Minehart et al, 2020). Moreover, Xiaotao et al (2018) assume that the positive outcomes of inclusive leadership take a curvilinear shape where high levels of inclusive leadership encourage the employees to contribute less to the organization as the risk of being excluded becomes lower.

3. Employee Well-Being: Components and Outcomes

Well-being, in general, indicates that an individual is satisfied and content with his life (Okafor, 2019) and that his spiritual, emotional, and work lives are balanced (Boddy et al, 2021). Most of the literature mentions three main components of employee well-being (Okafor, 2019): 1- subjective well-being, which refers to a positive feeling about one's own life (life satisfaction) (Cheung, 2016; Zhong et al, 2020), 2- workplace well-being which reflects satisfaction at work and work-related affect (work satisfaction) (Xanthopoulou et al, 2012), and 3- psychological well-being, which denotes having a sense of self-acceptance, autonomy, environmental mastery, meaningfulness, and positive interpersonal relations (Herb, 2015; Luu, 2019; Pawar, 2016; Pradhan and Hati, 2019). These components are independent and can be harmonious or contradictory. Therefore, they are treated independently as an employee may score high on all or only one or more of these components (Herb, 2015).

This study focuses on workplace well-being. Various organizations have been increasingly interested in fostering employee workplace well-being due to its diverse benefits (Cheung, 2016). At the individual level, employee workplace well-being is positively related to individual performance (Boddy et al, 2021; Page and Vella-Brodrick, 2009), job satisfaction, engagement, and commitment (Pradhan and Hati, 2019; Zhong et al, 2020), happiness, organizational citizenship (Okafor, 2019; Pawar, 2016), and is negatively related to turnover intentions (Boddy et al, 2021). Whereas at the organizational level, employee workplace well-being is positively related to increased organizational performance and productivity as well as negatively related to turnover rates (von Thiele Schwarz and Lornudd, 2021).

4. Employee Workplace Well-Being and Inclusive Leadership

Inclusive leadership is one of the antecedents that has a direct influence on employee satisfaction (Bish, 2021; Boddy et al, 2021; Kelloway et al, 2013; Samad et al, 2022). It emphasizes uniqueness and belongingness, encouraging the employees to express their distinct opinions and skills while simultaneously identifying themselves with the organization (Korkmaz et al, 2022; Roberson and Perry, 2021). It creates a safe working environment where everyone feels comfortable speaking up, especially marginalized groups (Ahmed et al, 2021; Buskirk, 2020). Stocker et al (2014) and Wieneke et al (2019) demonstrate that employee workplace well-being increases when the leader praises, supports, and recognizes the efforts of the employees. Therefore, this paper assumes that:

H1: Inclusive leadership is positively correlated to employee workplace well-being.

There are three basic traits of inclusive leadership. Leadership availability indicates that leadership is present and supportive of the employees (Korkmaz et al, 2022), cares about their needs, and offers guidance (Wang and Shi, 2021; Wuffli, 2016). Inclusive leadership is not only present at the professional level but is also present at the emotional level to build trust and cohesion, as well as foster extra-proactive behavior (Zhao et al, 2020). As

a result, inclusive leadership builds positive interpersonal relationships with employees (Choi et al, 2017; Ye et al, 2019), and creates an organizational environment that encourages the employees to reciprocate and be committed (Buskirk, 2020; (Iqbal et al, 2019; Luu, 2019; Qurrahtulain et al, 2022; Xiaotao et al, 2018). Hence, this paper further proposes that:

H2: Leadership availability is positively correlated to employee workplace well-being.

A second trait is accessibility. It implies that employees can reach leadership anytime and regardless of their power status (Buskirk, 2020; Wang and Shi, 2021). It encourages all employees to speak up (Minehart et al, 2020; Wuffli, 2016). Therefore, it is important to marginalized groups (Booyesen, 2014; Jin et al, 2017; Liu, 2018; van Knippenberg and van Ginkel, 2021). Moreover, inclusive leadership ensures fairness and equity (Javed et al, 2021; Mendelsohn, 2021), tolerance (Gallegos, 2014), humbleness, mercy, and sympathy (Wuffli, 2016). As a result, inclusive leadership inspires positive emotions and makes the employees feel worthy (Qurrahtulain et al, 2022), and positively treated (Tran and Choi, 2019). Therefore, this paper suggests that:

H3: Accessibility is positively correlated to employee workplace well-being.

Finally, inclusive leadership stresses openness. In addition to encouraging discussion and respect (Wuffli, 2016), inclusive leadership welcomes employees' opinions and ideas (Ashikali et al, 2021; Bao et al, 2022; Buskirk, 2020; Mendelsohn, 2021), involves employees in the decision-making process (Qurrahtulain et al, 2022; Randel et al, 2018; van Knippenberg and van Ginkel, 2021; Younas et al, 2021), and promotes cohesion and collaboration (Choi et al, 2017; Jolly and Lee, 2021; Minehart et al, 2020). Therefore, inclusive leadership does not adopt a command-and-control approach (Ye et al, 2019). As a result, the employees feel empowered instead of embarrassed or rejected (Bao et al, 2022). Thus, this paper presupposes that:

H4: Openness is positively correlated to employee workplace well-being.

5. Methodology

To investigate the extent to which inclusive leadership is correlated to employee well-being in public organizations, a quantitative analysis was adopted by disseminating a questionnaire to N=264 local officials working in various local units in three Egyptian governorates. To avoid any ethical concerns, the respondents were randomly chosen - after getting their informed consent and assuring the anonymity of their identity - while undergoing formal training. Choosing local officials was seen as suitable for the study for two reasons. First, local officials present different facets of diversity like gender and different levels of education (high-school education, university education, and postgraduate education). Second, they face various challenges daily when trying to meet the endless demands of local citizens. These challenges may negatively impact their well-being. Hence, local officials were considered the best to evaluate whether inclusive leadership correlates to their well-being while focusing on their differences in gender and educational level.

The questionnaire included questions on employee well-being benefiting from scales used by Herb (2015); Okafor (2019); and Pradhan and Hati, (2019), as well as questions on inclusive leadership and its three components following the scales adopted by Buskirk (2020) and Mendelsohn (2021). The questionnaire was pilot-tested on a few local officials to check their understanding of the questions. Afterward, the responses were coded and statistically analyzed using the SPSS version 20 software.

6. Results

To investigate the extent to which inclusive leadership is correlated to employee well-being in public organizations, a questionnaire was disseminated to N=234 local officials of three Egyptian governorates. Table 1 demonstrates the basic demographic characteristics of the participants.

Table 1: Demographics

		Gender		Total
		Female	Male	
Job	non-managerial	56	48	104
	managerial	68	62	130
Experience	< 1 year	2	0	2
	1 year till < 5 years	12	12	24

		Gender		Total
		Female	Male	
	5 years till < 10 years	26	36	62
	≥ 10 years	84	62	146
Educational level	School education	10	10	20
	Graduate	78	76	154
	Postgraduate	36	24	60
Total		124	110	234

To check the internal consistency of the responses regarding the three traits of inclusive leadership, a Cronbach analysis was conducted. It demonstrated a high level of inter-item reliability for availability of $\alpha = 0.955$, for accessibility of $\alpha = 0.859$, and for openness of $\alpha = 0.865$. As for employee well-being, Cronbach analysis also revealed a high level of inter-item reliability of $\alpha = 0.812$.

To check the extent the diverse respondents witness employee workplace well-being, the mean and standard deviation of the responses compared by gender and level of education were calculated. Despite men witnessing more workplace well-being ($M = 3.36$, $SD = 0.55$), than women ($M = 3.25$, $SD = 0.54$), this difference was insignificant ($p = .76$). As a result, this paper ignored comparing further results based on gender.

Yet when the results were compared according to the level of education, they revealed that the respondents with high-school education witnessed more workplace well-being ($M = 3.60$, $SD = 0.24$), followed by the respondents with postgraduate education ($M = 3.30$, $SD = 0.46$), and finally the respondents with a university degree ($M = 3.27$, $SD = 0.60$), with a significant difference between respondents with high school education on one hand and respondents with postgraduate education and the respondents with university education on the other ($p = .007$, $p = .015$ respectively). However, there was an insignificant difference between the respondents with postgraduate education and respondents with university education ($p = .69$). These results indicate the least educated witnessed more well-being than the rest of the respondents.

The correlation between inclusive leadership and employee workplace well-being

To investigate the correlation between inclusive leadership and well-being, Spearman's rho analysis was conducted (see Table 2). It was found that inclusive leadership was significantly correlated with employee workplace well-being ($r(233) = .500$, $p < .01$), verifying thereby H1. Since there was no significant difference between the responses based on gender, it can be concluded that both women and men witness equally a significant correlation between inclusive leadership and employee workplace well-being.

Table 2: Correlations between inclusive leadership and workplace well-being

Well-being felt by respondents			Well-being	Inclusive leadership	availability	accessibility	openness
Spearman's rho	Workplace well-being (of all respondents)	Correlation Coefficient	1,000	,500**	,402**	,493**	,382**
		Sig. (2-tailed)	.	,000	,000	,000	,000
		N	234	234	234	234	234
	Of respondents with high-school education	Correlation Coefficient	1,000	,713**	.	,598**	,332
		Sig. (2-tailed)	.	,000	.	,005	,153
		N	20	20	20	20	20
	Of respondents with a university education	Correlation Coefficient	1,000	,549**	,462**	,532**	,417**
		Sig. (2-tailed)	.	,000	,000	,000	,000
		N	154	154	154	154	154

Well-being felt by respondents			Well-being	Inclusive leadership	availability	accessibility	openness
	Of respondents with postgraduate education	Correlation Coefficient		,257*	,220	,263*	,827**
		Sig. (2-tailed)		,048	,091	,042	,238
		N	60	60	60	60	60
. could not be calculated due to a constant							
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

As for how respondents with different educational levels might witness the correlations, Table 2 also reveals that based on Spearman's rho analysis, the highest correlation between inclusive leadership and employee workplace well-being can be found among the respondents with high-school education ($r(19) = .713, p < .01$), followed by the respondents with university education ($r(153) = .549, p < .01$), and the respondents with postgraduate education ($r(59) = .257, p < .05$), indicating that the strongest correlation was found among the least educated.

The correlation between leadership availability and employee workplace well-being

To offer further details on how inclusive leadership is correlated to employee workplace well-being, Spearman's rho analysis was conducted on each trait of inclusive leadership to check how they are correlated to employee workplace well-being (see Table 2). With regards to the correlation between leadership availability and employee workplace well-being, Spearman's rho analysis reveals a significant correlation for all the respondents ($r(233) = .402, p < .01$), verifying thereby H2. This indicates that leadership availability contributes to employee workplace well-being for all the respondents. To check how the respondents with different educational levels witness this correlation, Spearman's rho analysis reveals that only the respondents with university education (who also constitute the majority of the respondents) felt this correlation ($r(153) = .462, p < .01$). These results indicate that for the majority of the respondents, leadership availability contributes to their workplace well-being.

The correlation between leadership accessibility and employee workplace well-being

With regards to the correlation between leadership accessibility and employee workplace well-being (see Table 2), Spearman's rho analysis reveals a significant correlation for all the respondents ($r(233) = .493, p < .01$), verifying thereby H3. To investigate how the respondents with different educational levels witness this correlation, Spearman's rho analysis reveals the respondents with high-school education strongly witness this correlation ($r(19) = .598, p < .01$), followed by the respondents with university education ($r(153) = .532, p < .01$), and the respondents with postgraduate education ($r(59) = .263, p < .05$). These results reveal that the respondents with high school education feel that inclusive leadership is accessible to them more than those respondents with a university education or postgraduate education.

The correlation between leadership openness and employee workplace well-being

Concerning the correlation between leadership openness and employee workplace well-being (see Table 2), Spearman's rho analysis reveals a significant correlation for all the respondents ($r(233) = .382, p < .01$), verifying thereby H4. As for how the respondents with different educational levels witnessed this correlation (see Table 2), Spearman's rho analysis reveals that the respondents with postgraduate education are the strongest to witness this correlation ($r(59) = .263, p < .05$), followed by the respondents with university education ($r(153) = .532, p < .01$), but not the respondents with a high-school education. These results indicate that inclusive leadership considers the opinions of the well- and highly-educated employees more than those with high-school education when making decisions.

7. Discussion

When investigating the extent to which inclusive leadership is correlated to employee well-being in public organizations, the results build on previous research (see Ahmed et al, 2021; Buskirk, 2020; Korkmaz et al, 2022) and reveal that inclusive leadership is positively correlated to employee workplace well-being.

Interestingly, the results reveal that the correlation between workplace well-being and inclusive leadership differs among employees with different educational levels. The less educated respondents, representing the marginalized group, are more influenced by inclusive leadership than the highly educated respondents. This confirms that inclusive leadership is important to marginalized groups as indicated by Jin et al (2017), Liu (2018), and van Knippenberg and van Ginkel (2021).

Gender, however, did not influence the way inclusive leadership is correlated to employee workplace well-being, suggesting that not all types of diversity witness inclusive leadership equally.

The results reveal also that leadership accessibility had the strongest influence on workplace well-being followed by leadership availability and openness, indicating that it is important to allow the employees to express their opinions and ideas.

Finally, inclusive leadership traits influence workplace well-being differently based on educational levels. For employees with a high-school education and a university education, leadership accessibility had the highest correlation with workplace well-being. While for those with postgraduate education, leadership openness had the highest correlation. This indicates that being heard is crucial for employees with high school and university education, whereas considering their opinions in decision-making is more important for those with postgraduate education.

To sum up, this study confirms the stream of research on the importance of adopting positive relational leadership styles. It indicates that inclusive leadership is significantly correlated to workplace well-being, especially for marginalized groups. Second, it demonstrates that not all types of diversity are equally influenced by inclusive leadership. Finally, it reveals that inclusive leadership traits correlate differently to workplace well-being. Leadership accessibility proved to be more important than leadership openness and availability, respectively.

Despite these important conclusions, this study has a few limitations. First, it relied on self-reports which can be biased. Therefore, further longitudinal studies are recommended to verify the results. Second, as this study has focused on gender and educational levels as different facets of diversity, it is recommended that further studies investigate how other types of diversity might be influenced by inclusive leadership. Finally, this study was implemented on respondents working in the local government. Hence, further cross-sectional and cross-cultural studies are recommended to verify further the results.

References

- Ahmed, F., Zhao, F., Faraz, N. and Qin, Y. (2021) "How inclusive leadership paves way for psychological well-being of employees during trauma and crisis: A three-wave longitudinal mediation study", *Journal of Advanced Nursing*, Vol 77, No. 2, pp 819–831.
- Ashikali, T., Groeneveld, S. and Kuipers, B. (2021) "The Role of Inclusive Leadership in Supporting an Inclusive Climate in Diverse Public Sector Teams". *Review of Public Personnel Administration*, Vol 41, No. 3, pp 497–519.
- Bannay, D., Hadi, M. and Amanah, A. (2020) "The impact of inclusive leadership behaviors on innovative workplace behavior with an emphasis on the mediating role of work engagement", *Problems and Perspectives in Management*, Vol 18, No. 3, pp 479–491.
- Bao, P., Xiao, Z., Bao, G. and Noorderhaven, N. (2022) "Inclusive leadership and employee work engagement: a moderated mediation model", *Baltic Journal of Management*, Vol 17, No. 1, pp 124–139.
- Bish, A. (2021) "Developmental HR Practices as Tools to Support Employee Well-Being", Brough, P., Gardiner, E. and Daniels, K. (Eds.), *Handbook on Management and Employment Practices* (pp 393-416), Springer, Cham.
- Boddy, C., Malovany, E., Kunter, A. and Gull, G. (2021) "Employee Well-Being Under Corporate Psychopath Leaders", Dhiman, S. (Ed.), *The Palgrave Handbook of Workplace Well-Being* (pp 843–869), Springer International Publishing.
- Booyesen, L. (2014) "The Development of Inclusive Leadership Practice and Processes". Ferdman, B. and Deane, B. (Eds.), *Diversity at Work: The Practice of Inclusion* (pp 296–329), John Wiley & Sons, Inc.
- Buskirk, M. (2020) *Inclusive Leadership, Psychological Empowerment, and Affective Organizational Commitment: A Mediated Model*, M.Sc. Thesis, San Jose State University.
- Chen, H., Liang, Q., Feng, C. and Zhang, Y. (2021), "Leadership and Follower Voice: The Role of Inclusive Leadership and Group Faultlines in Promoting Collective Voice Behavior", *Journal of Applied Behavioral Science*, <https://doi.org/10.1177/00218863211035243>
- Cheung, J. (2016) *Employee Well-Being Profiles: A Person-Centered Approach to Understanding Multiple Dimensions of Psychosocial Well-Being*, Ph.D. Dissertation, Clemson University.
- Choi, S., Tran, T. and Kang, S. (2017), "Inclusive Leadership and Employee Well-Being: The Mediating Role of Person-Job Fit", *Journal of Happiness Studies*, Vol 18, No. 6, pp 1877–1901.
- Cohen, R. (2022) *The Relationships between Dimensions of Inclusive Leadership and Aspects of Employee Engagement: Crucial Connections for Organizational Success*, Ph.D. Dissertation, Antioch University.

- de Souza, N. and Gama, K. (2020) "Diversity and Inclusion: Culture and Perception in Information Technology Companies", *Revista Iberoamericana de Tecnologías Del Aprendizaje*, Vol 15, No. 4, pp 352–361.
- Gallegos, P. (2014) "The Work of Inclusive Leadership Fostering Authentic Relationships, Modeling Courage and Humility", Ferdman, B. and Deane, B. (Eds.), *Diversity at Work: The Practice of Inclusion* (pp 177–202), John Wiley & Sons, Inc.
- Herb, K. (2015) *Investigating the Impact of Employee Development Activities on Employee Well-Being*, Ph.D. Dissertation, The University of Akron.
- Iqbal, K., Zahid, M. and Arif, M. (2019) "How Does Socially Responsible Human Resource Management Influence Employee Well-Being?", Capaldi, N. Idowu, S., Schmidpeter, R. and Brueckner, M. (Eds.), *Responsible Business in Uncertain Times and for a Sustainable Future, CSR, Sustainability, Ethics and Governance* (pp. 207–218), Springer Nature Switzerland AG.
- Javed, B., Fatima, T., Khan, A. K. and Bashir, S. (2021) "Impact of Inclusive Leadership on Innovative Work Behavior: The Role of Creative Self-Efficacy", *Journal of Creative Behavior*, Vol 55, No. 3, pp 769–782.
- Javed, B., Naqvi, S., Khan, A., Arjoon, S. and Tayyeb, H. (2019) "Impact of inclusive leadership on innovative work behavior: The role of psychological safety", *Journal of Management and Organization*, Vol 25, No. 1, pp 117–136.
- Jin, M., Lee, J. and Lee, M. (2017) "Does leadership matter in diversity management? Assessing the relative impact of diversity policy and inclusive leadership in the public sector", *Leadership and Organization Development Journal*, Vol 38, No. 2, pp 303–319.
- Jolly, P. and Lee, L. (2021) "Silence is not Golden: Motivating Employee Voice through Inclusive Leadership", *Journal of Hospitality and Tourism Research*, Vol 45, No. 6, pp 1092–1113.
- Kelloway, E., Weigand, H., Mckee, M. and Das, H. (2013) "Positive leadership and employee well-being", *Journal of Leadership and Organizational Studies*, Vol 20, No. 1, pp 107–117.
- Korkmaz, A., van Engen, M., Knappert, L. and Schalk, R. (2022) "About and beyond leading uniqueness and belongingness: A systematic review of inclusive leadership research", *Human Resource Management Review*, <https://doi.org/10.1016/j.hrmr.2022.100894>
- Li, A. (2021) *Inclusive Leadership Questionnaire: The Design and Validation of a Theory-based Instrument*, Ph.D. Dissertation, Columbia University.
- Liu, H. (2018) "Leadership from the Margins: Practising Inclusivity with 'Outsiders Within'", Adapa, S. and Sheridan, A. (Eds.), *Inclusive Leadership: Negotiating Gender Spaces* (pp 1–20), Palgrave MacMillan.
- Luu, T. (2019) "The well-being among hospitality employees with disabilities: The role of disability inclusive benevolent leadership", *International Journal of Hospitality Management*, Vol 80, pp 25–35.
- Mendelsohn, D. (2021) *Inclusive Leadership: Exploration of Individual and Situational Antecedents*, Ph.D. Dissertation, Columbia University.
- Minehart, R., Foldy, E., Long, J. and Weller, J. (2020) "Challenging gender stereotypes and advancing inclusive leadership in the operating theatre", *British Journal of Anaesthesia*, Vol 124, No. 3, pp e148–e154.
- Mor Barak, M. (2015) "Inclusion is the key to diversity management, but what is inclusion?", *Human Service Organizations Management, Leadership and Governance*, Vol 39, No. 2, pp 83–88.
- Okafor, B. (2019) *The Impact of Dissent and Workplace Freedom of Speech on Employees' Well-Being*. Master Thesis, North Dakota State University.
- Page, K. and Vella-Brodrick, D. (2009) "The "what", "why" and "how" of employee well-being: A new model", *Social Indicators Research*, Vol 90, No. 3, pp 441–458.
- Pawar, B. (2016) "Workplace spirituality and employee well-being: an empirical examination", *Employee Relations*, Vol 38, No.6, pp 975–994.
- Pradhan, R. and Hati, L. (2019) "The measurement of employee well-being: Development and validation of a scale", *Global Business Review*, <https://doi.org/10.1177/0972150919859101>
- Qurrahtulain, K., Bashir, T., Hussain, I., Ahmed, S. and Nisar, A. (2022) "Impact of inclusive leadership on adaptive performance with the mediation of vigor at work and moderation of internal locus of control", *Journal of Public Affairs*, Vol 22, No.1, <https://doi.org/10.1002/pa.2380>
- Randel, A., Galvin, B., Shore, L., Ehrhart, K., Chung, B., Dean, M. and Kedharnath, U. (2018) "Inclusive leadership: Realizing positive outcomes through belongingness and being valued for uniqueness", *Human Resource Management Review*, Vol 28, No. 2, pp 190–203.
- Roberson, Q. and Perry, J. (2021) "Inclusive leadership in thought and action: A thematic analysis", *Group and Organization Management*, <https://doi.org/10.1177/10596011211013161>
- Samad, A., Muchiri, M. and Shahid, S. (2022) "Investigating leadership and employee well-being in higher education", *Personnel Review*, Vol 51, No. 1, pp.57–76.
- Shore, L. M. and Chung, B.G. (2022) "Enhancing leader inclusion while preventing social exclusion in the workgroup", *Human Resource Management Review*, <https://doi.org/10.1016/j.hrmr.2022.100902>
- Sprouse, M. (2021) *Inclusive Leadership and Work Engagement: Mediating Roles of Organizational Commitment and Creativity*, Ph.D. Dissertation, Grand Canyon University.
- Stocker, D., Jacobshagen, N., Krings, R., Pfister, I. and Semmer, N. (2014) "Appreciative leadership and employee well-being in everyday working life", *Zeitschrift Fur Personalforschung*, Vol 28, No. 1–2, pp 73–95.
- Sung, S. (2021) *Effects of Inclusive Leadership on Job Satisfaction: The Mediating Role of Organizational Justice*, Ph.D. Dissertation, Alliant International University.

- Tran, T. and Choi, S. (2019) "Effects of inclusive leadership on organizational citizenship behavior: The mediating roles of organizational justice and learning culture", *Journal of Pacific Rim Psychology*, Vol 13, <https://doi.org/10.1017/prp.2019.10>
- van Knippenberg, D. and van Ginkel, W. (2021) "A diversity mindset perspective on inclusive leadership", *Group and Organization Management*, <https://doi.org/10.1177/1059601121997229>
- von Thiele Schwarz, U. and Lornudd, C. (2021) "Corporate boards and employee well-being", Brough, P., Gardiner, E. and Daniels, K. (Eds.), *Handbook on Management and Employment Practices* (pp 229-246), Springer Nature Switzerland AG.
- Wang, F. and Shi, W. (2021) "Inclusive leadership and pro-social rule breaking: The role of psychological safety, leadership identification, and leader-member exchange", *Psychological Reports*, Vol 124, No.5, pp 2155–2179.
- Wieneke, K., Schaepe, K., Egginton, J., Jenkins, S., Block, N., Riley, B., Sifuentes, L. and Clark, M. (2019) "The supervisor's perceived role in employee well-being: Results from Mayo Clinic", *American Journal of Health Promotion*, Vol 33, No. 2, pp 300–311.
- Wuffli, P. (2016) *Inclusive Leadership: A Framework for the Global Era*, Springer International Publishing.
- Xanthopoulou, D., Bakker, A. and Ilies, R. (2012) "Everyday working life: Explaining within-person fluctuations in employee well-being", *Human Relations*, Vol 65, No. 9, pp 1051–1069.
- Xiaotao, Z., Yang, X., Diaz, I. and Yu, M. (2018) "Is too much inclusive leadership a good thing? An examination of curvilinear relationship between inclusive leadership and employees' task performance", *International Journal of Manpower*, Vol 39, No. 7, pp 882–895.
- Ye, Q., Wang, D. and Guo, W. (2019) "Inclusive leadership and team innovation: The role of team voice and performance pressure", *European Management Journal*, Vol 37, No. 4, pp 468–480.
- Younas, A., Wang, D., Javed, B. and Zaffar, M. (2021) "Moving beyond the mechanistic structures: The role of inclusive leadership in developing change-oriented organizational citizenship behaviour", *Canadian Journal of Administrative Sciences*, Vol 38, No. 1, pp 42–52.
- Zhao, F., Ahmed, F. and Faraz, N. (2020) "Caring for the caregiver during COVID-19 outbreak: Does inclusive leadership improve psychological safety and curb psychological distress? A cross-sectional study", *International Journal of Nursing Studies*, Vol 110, <https://doi.org/10.1016/j.ijnurstu.2020.103725>
- Zhong, J., Li, Y. and Luo, J. (2022) "The trickle-down effects of inclusive leadership on employees' innovative behavior: The joint moderating effects of vicarious learning and organizational inclusion climate", *Journal of Leadership and Organizational Studies*, Vol 29, No. 3, pp 342–358.
- Zhong, J., Zhang, L., Li, P. and Zhang, D. (2020) "Can leader humility enhance employee well-being? The mediating role of employee humility", *Leadership and Organization Development Journal*, Vol 41, No. 1, pp 19–36.

Sustainable Leadership in Practice in Hungary

Andrea Bencsik¹ and Szilard Berke²

¹University of Pannonia, Veszprem, Hungary

²Obuda University, Budapest, Hungary

bencsik.andrea@gtk.uni-pannon.hu

berke.szilard@uni-obuda.hu

Abstract: 'Sustainability' is one of the most widely used terms today. The practice of sustainability in organisations has been analysed from many perspectives, but fewer studies have focused on the role of leadership, specifically sustainability leadership. Sustainable leadership is not about altruism or charity work or just thinking 'green'. Sustainable leadership makes organisations more competitive, more resilient, faster, more responsive and more attractive to customers. It helps attract talented employees and makes businesses more attractive to investors. Ensuring these conditions is a major management challenge. The aim of this research is to assess the extent to which Hungarian managers are prepared to meet the requirements of sustainable management. The research model, the pyramid of sustainable leadership is based on the belief that leaders should pay attention to social and environmental issues and encourage organisational learning and development. The sustainable leadership pyramid details the three pillars of social, environmental and economic sustainability. These pillars must be balanced to ensure sustainable management. Learning and development form the basis of the pyramid, and social and environmental responsibility and economic performance build on this. The research is based on interviews with 32 top managers of SMEs, using the elements of Avery and Bergsteiner's sustainable management pyramid as the basis for the interview questions. The structured interviews took the form of face-to-face discussions. The questions addressed all elements of the pyramid. Audio recordings of the recorded interviews were transcribed and analysed using the Atlas 8 software. The results show that the elements of the pyramid as elements of expectations for sustainable leadership are only partially reflected in management practice. The most significant gap is in the implementation of the elements of the pyramid presenting the steps of the knowledge management process. The Honeybee philosophy as a contribution to the competitive advantage of organisations is only partially implemented, and overcoming the gaps is a major challenge. The research provides a new approach to sustainable management expectations and valuable lessons for SME managers. Future research will aim to expand the sample for international comparison.

Keywords: Atlas.ti, Honeybee, Interview, Sustainable leadership model

1. Introduction

'Sustainability' is one of the most widely used terms today. Google's search engine showed about 1 970 000 000 results (in 0.45 seconds) on 01.06.2023. For organisational life, this figure is 644 000 000 hits (in 0.49 seconds). The definition of sustainability has been formulated by many, depending on the economic sector, industry or organisational activity (Sakalasooriya, 2021; Taticchi, & Demartini, 2021). In a more general sense, thinking at the societal level, the United Nations, in its 1987 report *Our Common Future*, stated that 'Sustainability is the satisfaction of the present needs of humanity, together with the preservation of the environment and natural resources for future generations.' In 2015, a world summit committed to developing a framework for sustainable development. The most serious problems identified were poverty, hunger, climate change, social and economic inequalities, water depletion, burgeoning energy demand and environmental pollution. These were followed by 17 so-called Sustainable Development Goals (SDGs) with 169 additional sub-goals to ensure that the world's countries act on global problems in a coherent way. In the set of goals to be achieved by 2030, the targets under 8 and 9 summarise the expectations that organisations engaged in economic activity must meet.

These include, but are not limited to, the main activities that trigger reflection and action:

- Economic activities that favour human well-being, while respecting general ethical principles
- New models and indicators to support economic growth, alternative economic models
- Rethinking financial systems
- Focus on labour (tackling inequalities (gender, wage, sectoral, etc.), work-life balance, labour law issues)
- New technologies, innovation solutions
- Infrastructural solutions (ICT, waste, water, electricity, renewable resources, etc.)

As our study deals with research on organisations, our findings should be interpreted at this level. The main reasons why it is necessary to address this issue are business efficiency, customer satisfaction, financial stability, reputation, legal obligations, etc. (Wijethilake et al, 2023).

Meeting expectations, creating the conditions and expected positive returns within an organisation is primarily the responsibility of the manager. This means that the leader must have the mindset, knowledge, competencies, behaviours and leadership style to enable him/her to work according to the expectations set out above. These are met by so-called sustainability leadership, which is a new approach to the requirements placed on the leader. Our research questions are formulated as follows:

Q1: To what extent do the managers of your organisation comply with the requirements of sustainable management, and to what extent is the management style applied?

Q2: To what extent do organisational culture and managerial preparedness interact and influence the implementation of sustainable management principles?

Q3: To what extent does the attention paid to the human factor (training, succession education, knowledge sharing, etc.) influence managers' sustainability decisions in the context of innovation?

After a brief theoretical overview, the practical studies and their results are presented.

2. Theoretical Overview

2.1 Sustainable Leadership

The new conditions of economic development and the social phenomena that accompany it present leaders with new challenges. New thinking, an integrative approach and a holistic approach are needed to integrate economic benefits, social responsibility and environmental protection (Bradley, et al, 2020).

The expectations of leaders can be formulated at three levels: individual, organisational and 'cross'. At the *individual level*, leaders are dominated primarily by their individual attributes, which they can draw on to design and operate sustainable organisations. Of particular importance for sustainability are moral values in the organisational implementation of actions (Renwick et al, 2013) and the attention of leaders to their own needs, especially in terms of their psychological and physiological health (Casserley and Critchley, 2010).

The three basic pillars of sustainable leadership at the *organisational level* are *organisational culture*, *strategy* and *human resource development*. Sustainable leadership approaches the shaping of *organizational culture* from the perspective of innovation, trust and sustainability (Avery and Bergsteiner, 2011), while at the same time it reinforces the activities of sustainable leadership (Amara and Chen, 2020). The *strategic orientation* focuses on the relationships between individuals, business communities, the natural environment and market demand. To achieve this, strategic decisions also focus on social well-being and ecosystem protection (Burawat, 2019). *Human resource development* implies people-centred leadership. Employees are also stakeholders in the organization, acting as a loyal and committed team (Avery and Bergsteiner, 2011). The cross-level means that sustainable leadership, by understanding new trends and linking the organisational and individual perspectives, is better able to integrate sustainability ideas into the development of the organisation. In doing so, they facilitate the transformation of the organisation into a sustainable business.

Tiedeman and colleagues (2013) have put together a model of sustainable leadership expectations. Table 1 summarises the desirable elements and their business terminology.

Table 1: Elements of sustainable leadership

Elements of sustainable leadership	Concepts used in economics and business
Context	Recognising interdependence; complexity; ambiguity; interconnectedness; resource constraints; regulators; megatrends
Consciousness	Mindsets; world views; beliefs; mental models; attitudes
Continuity	Long-term horizon; courage; strength; common purpose; centrality; change processes
Connectedness	Serving the needs of all stakeholders; long and short term influence; cooperation; trust; fairness; altruism; kinship; needs rather than wants
Creativity	Innovation for sustainable shared value creation; sustainable business models; new value measurement models; flow
Collectiveness	Increasing collective impact; embedding sustainability in business. structure; sustainable consumption

Source: Tiedeman et al, 2013)

Sustainable leadership is not about altruism or charity work, or just thinking "green". It helps attract talented employees and makes businesses more attractive to investors. Examples of sustainable business leadership can be found around the world (Aung & Hallinger, 2023).

In this environment of shifting expectations, new leadership styles have emerged that aim to achieve sustainable organisational performance. The Pyramid of Sustainable Leadership (Avery & Bergsteiner, 2011) and the Cambridge University model (Visser & Courtice, 2011) are two trends that combine sustainable leadership and organizational learning. Both models are based on the belief that leaders should pay attention to social and environmental issues and encourage organisational learning and development.

The sustainable leadership pyramid details the three pillars of social, environmental and economic sustainability. These pillars must be balanced to ensure sustainable leadership. Learning and development form the basis of the pyramid, and social and environmental responsibility and economic performance build on this.

The Cambridge University model favours three foundations for organisational learning: cognitive learning, social learning and learning at organisational scale. The model is based on the premise that organisational learning leads to growth and development, which is essential for sustainable development and leadership.

Both models emphasise the importance of organisational learning to ensure sustainable leadership. While both models play an important role in promoting sustainable management, they have different ways of thinking about the process of sustainable management and the importance of organisational learning. Avery & Bergsteiner's pyramid (2011) most accurately summarises the key role of leadership in balancing the triple aim of economy, society and environment. We therefore followed this logic in our research.

2.2 International Outlook

The topic of sustainability leadership is most theoretically explored in the literature, where it is focused on the characteristics of sustainable organisational functioning in combination with different theories. Few practical studies have been found in recent publications. Mostly, educational institutions have been studied, where teacher behaviour characteristics have been tested against sustainable leadership characteristics (Farooq, 2018; Al-Zawahreh et al, 2019). It is also interesting to note that the practical studies are from poorer countries, mainly in Asia (Thailand, Malaysia, Indonesia, etc.). Kantabutra and Thepha-Aphiraks (2016) used case studies and interviews to test Avery's 19-element model built in previous research. They were able to identify six elements that characterised the leadership practices of the Thai organisations they studied. Knowledge sharing as a defining element of the Honeybee model was also examined in the study by Iqbal and Piwowar-Sulej (2023). They tested the mechanism of knowledge sharing for innovation in developing countries. They found that the characteristics of sustainable leadership facilitate the process of external and internal knowledge sharing. In another study (Iqbal et al, 2020), they surveyed 405 SMEs on the mediating role of psychological safety between sustainable leadership and performance. The results show that sustainable leadership has a positive indirect effect on sustainable performance. Lee (2017) tested the relationship between sustainable leadership and organizational effectiveness. His results show that the strength of each element of sustainable leadership affects organizational effectiveness in different ways. Armani and colleagues (2020) investigated the supporting role of sustainable leadership in change implementation. Managers of four organisations were interviewed. They concluded that the role of sustainable leadership is a function of organisational maturity. A significant positive effect of sustainable leadership on the relationship between organizational learning and sustainable performance was found by Iqbal and Ahmad (2020) in a sample of SMEs in Pakistan. In another study, experts examined organizational practices in the public sector based on theoretical studies (Rehman et al, 2019). Kalkavan (2015) studied Turkish managers and found that although they possessed significant managerial competencies, their sustainable leadership skills fell far short of expectations. Suriyankietkaew and his colleagues (2022) came to a similar conclusion in their study of Thai SMEs. The only study that could be found tested Avery and Bergsteiner's model in a Spanish context. The study interviewed female managers working in the logistics sector, based on the Honeybee and Locust sustainable leadership model (Bulmer et al, 2021). The results showed that a mixture of Honeybee and Locust type leadership is prevalent in the Spanish logistics sector. Organisations are not very open to knowledge sharing, and considerable development and training in management practices is needed. This will be followed by a presentation of the logic of the sustainable management pyramid and the results of practical research.

2.3 The Sustainable Leadership Pyramid

Avery (2005) introduced the concept of sustainable leadership to the field of corporate governance. He illustrates the concept of sustainable management through the examples of two development models (the

British-American/Honeybee model and the Rhineland/Sasha model), which represent opposing values. The concept of sustainable leadership (Honeybee logic) summarised 19 elements that require the use of new leadership competencies (e.g. long-term decision making, building a team of employees, providing high quality products and services, etc.). Based on this study, Avery and Bergsteiner (2011) identified four additional competencies (self-management, trust, innovation and workplace involvement) and framed them together with the initial 19 elements. This resulted in a 23-element concept of sustainable leadership. The sustainable leadership pyramid provides a visual representation of the different aspects of sustainable leadership. Fleshing out lower level practices facilitates and supports the implementation of higher level practices, while higher level practices build on the core elements. The pyramid is a three-level model that combines sustainability levels (life-space, social and economic) with management levels (tactical, strategic and systemic). The pyramid is a logical mapping of the sustainable management criteria, whose interconnectedness demonstrates how the British-American so-called Honeybee philosophy contributes to the competitive advantage of organisations. The logic of the thinking is illustrated in Figure 1.



Figure 1: The sustainable leadership pyramid (Avery & Bergsteiner, 2011)

The basic elements corresponding to the numbering shown at the bottom of the pyramid include.

Basic elements

1. Appropriate leadership style 2. Talent recruiting and retaining staff 3. Developing people continuously 4. Internal succession planning 5. Respect, diversity and inclusion 6. Ethics and virtues 7. Good governance and accountability	8. Long-term horizon 9. Considered organisational change 10. Independence from outside interference 11. Environmental responsibility 12. Social responsibility 13. Broad stakeholder focus 14. Strong shared vision and purpose

In order for the expectations defined by each element of the pyramid to be met, specific competency expectations, behaviours and values can be formulated for leaders (Avery & Bergsteiner, 2011). The competency expectations and the elements of the pyramid are paired to show the interdependence and the leadership readiness required to meet the expectations (see Table 2).

Table 2: Elements of a sustainable leadership pyramid and the required leadership competences

Expected competences, leadership attitude	Criteria for the elements of a sustainable leadership pyramid
Responsibility	Influencing decisions, CSR, environmental and volunteering programmes
Adaptation to change	Frequency of changes, preparedness
Continuous improvement	Provision of regular training, development opportunities
Collaboration, openness	Management and staff commitment

Expected competences, leadership attitude	Criteria for the elements of a sustainable leadership pyramid
Sensitivity	Characteristics of trust building
Teamwork, cooperation	Teamwork, knowledge sharing in the organisation
Growth orientation	Talent management in the organisation, succession programme
Customer focus	Consideration of the interests of internal and external stakeholders
Value-based leadership	Ethical principles, ethical leadership
Transparency	Characterisation of own leadership style
Innovation	Innovation in the organisation
Role model	Self-management, internal motivation
Long-term thinking	Vision in everyday life, involvement, organisational vision

Source: own construction

In the next chapter, we report on research based on the theoretical framework described above.

3. Research Methodology

Using the literature review, we explore our research topic along the following assumptions:

Assumption 1: Leaders in Hungarian organisations do not yet or only partially fulfil the basic elements of the expectations of sustainability leaders.

Assumption 2: An organisational culture based on trust supports knowledge sharing and promotes supportive behaviours of employees towards sustainability goals.

Assumption 3: The level of innovation depends on the level of attention paid to the human factor (training, knowledge sharing, succession planning).

3.1 Data Collection/Sample

For data collection, a qualitative methodology was used, interviews were conducted with (CEOs) or functional (HR, project) managers of organisations in Hungary. Interview subjects were selected by random sampling. As a first step, all 250 items of the Orbis database of Hungarian firms were selected, with a preference for the associates of the Hungarian firms. This resulted in 2068 organisations whose managers were contacted by phone and/or email. A total of 32 interviews were conducted with the managers willing to be interviewed between September 2022 and January 2023 (20 in manufacturing and 12 in service organisations). During the structured interview, open and semi-open questions were asked. Respondents were informed of the topics in advance so that they could prepare for the interview. The interview questions were grouped into three main categories, according to the levels of the sustainable management pyramid: 1) baseline expectations, 2) higher level practices, and 3) key drivers of performance. Interviews lasted 50-70 minutes; all interviews were recorded and transcribed for later systematic analysis. The basis of the questionnaire, the focus of the questions, was the elements of the pyramid with their associated managerial competency expectations.

3.2 Analysis

The primary data for our study was obtained from the structured interviews with managers. In the analysis phase, we used Atlas.ti 8 text analysis software to structure and analyse the qualitative data. The software provides the possibility to code the interview transcripts' text files, categorizing them according to different perspectives, taking into account the research topic. The themes were analysed in terms of our hypotheses. After the management interviews were completed, the transcripts were read several times, reminders were added to the relevant content (memos). In the coding phase, the data were broken down into manageable segments and labelled for identification. Three main aspects of qualitative analysis were considered: representation of managerial opinions, data analysis and interpretation. The results of the detailed analyses are presented in the next chapter.

3.3 Research Findings and Discussion

The question sets of the questionnaire, the codes used for the analysis, our assumptions and our research questions are consistent. To test the first hypothesis, we looked for the practical application of the basic elements of the sustainable leadership pyramid. To verify the second hypothesis, we sought to identify the characteristics of a trust-based culture, and to verify the third hypothesis, we sought to identify the relationship between innovation and attention to human resources. The relationship between the codes, the questions and our hypotheses is shown in Table 3.

Table 3: Relationship between assumptions and interview questions

Codes		Focuses of interview questions	Assumptions
Leadership style	Foundation practices	Appropriate leadership style	Leaders in Hungarian organisations do not yet or only partially fulfil the basic elements of the expectations of sustainability leaders.
Talent management		Talent recruiting & retaining staff	
Training		Developing people continuously	
Youth		Internal succession planning	
Concepts		Respect, diversity & inclusion	
Ethical leadership		Ethics and virtues	
Organisational practice		Good governance & accountability	
Long-term aims		Long-term horizon	
Changes		Considered organisational change	
Decision-make mechanism		Independence from outside interference	
Environment		Environmental responsibility	
CSR		Social responsibility	
Stakeholders		Broad stakeholder focus	
Vision		Strong shared vision and purpose	
Motivation		High-level practices	
	Self-management		
Culture	Team orientation		
	Enabling culture		
Knowledge retention	Knowledge sharing and retention		
Values		Trust	
Creativity	Key performance drivers	Innovation	The level of innovation depends on the level of attention paid to the human factor (training, knowledge sharing, succession planning).
Team-building		Self-engagement	
Rules		Quality	
Sustainability			

Source: own construction

To confirm our *first assumption*, we analysed the answers to the questions included in the core elements. For each core element, the 6 most frequently mentioned concepts are listed in the Table 4. As typical exercises show, the results are mixed. Based on these results, our first assumption is confirmed.

Table 4: Core elements and most frequently mentioned terms

Basic elements of Honeybee Pyramid	The most frequently mentioned terms	Typical exercises
Appropriate leadership style	empowering leader, empathetic leader, democratic style, coaching type leader, team player, collaborative	applies
Talent recruiting & retaining staff	apprenticeship programme, talent programme, difficult to recruit and retain, no money, career path, complex job	difficult to find and keep
Developing people continuously	expensive, professional training, in-house, short-term, no regular training, self-training	not all organisations
Internal succession planning	youth education, internal referral programme, mentoring, ad-hoc, fire-fighting, no programme	no well thought-out youth programme
Respect, diversity & inclusion	principles, to be improved, not ok, culture dependent, leadership by example, discrimination	considered important, there are many gaps
Ethics and virtues	bribery, fraud, online training, clear and honest communication, code of ethics, trust	use not integrated into everyday life
Good governance & accountability	strategy building, decisions, rapid response, competitiveness, sustainability, awareness	strategic thinking and decisions are missing from everyday life
Long-term horizon	forward planning, vision, awareness, we bleed from many wounds, we are stuck, we are not good at it	usually one year
Considered organisational change	trust, flexible, external expert, inertia, slow, continuous standby	continuous change
Independence from outside interference	personality dependent, quick decision, be informed, professionally independent, gather useful information, cannot exclude external environmental influences	internal uncertainty or insufficient level of information
Environmental responsibility	topical issue, no such programme, ad-hoc programmes, very small ecological footprint, important value, awareness-raising role	where it exists, it is taken seriously
Social responsibility	no such programme, voluntary tree planting, cooperation with child protection centre, blood donation, litter picking, clothes distribution	in most cases there is no
Broad stakeholder focus	listening to them, conscious customer focus, priorities, internal attention first, external stakeholders second, organisational interest more important than individual interests, compromise	focus more on internal stakeholders
Strong shared vision and purpose	breaking down strategy to individual level, we worked it out together, we dare to dream, teamwork at management level, we don't have a vision, known at management level	with few exceptions, there is vision

Source: own construction

As an illustration, the main terms associated with management style and training programmes are shown in Figure 2.

is not a full climate of trust. Again, an element that divided respondents. Although everyone considers it very important, in practice few cases reported a full climate of trust. In most cases there is a strong ambition, but also serious gaps. The word cloud can be seen in the Figure 5.

Our second hypothesis proved to be true, as the climate of trust was repeatedly mentioned as a condition for knowledge sharing. In all cases, the behaviour and thinking of staff and managers is influenced by the atmosphere that the culture provides, and the leadership style as a role model also has a strong influence. The area of knowledge sharing is at a critical level. Our hypothesis fails to account for one shortcoming, in terms of the direction of influence on employee behaviour. The mention of sustainability was not at all prevalent in any of the responses. Thus, we can only partially confirm this hypothesis.

Term	Count	Relative	Significance	Trend
knowledge	35	14,124	0.000	
sharing	15	6,053	0.000	
share	10	4,036	0.000	
information	10	4,036	0.000	
processes	9	3,632	0.000	
retention	8	3,228	0.000	

Figure 4: Frequencies and trends of knowledge sharing

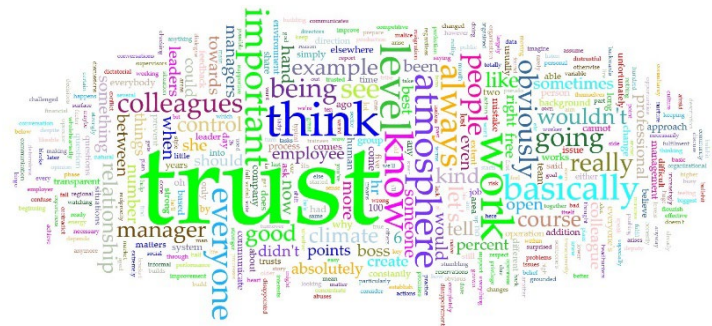


Figure 5: Word cloud of trust

Our *assumption 3* is that the degree of innovation depends on the degree of attention paid to the human factor (training, knowledge sharing, succession planning). This required an examination of key performance indicators (innovation, employee engagement, quality). We looked at the answers to the codes formulated on the basis of the questionnaire questions. The results are shown in Table 5.

Table 5: Key performance indicators and most frequently mentioned terms

Key performance indicators of Honeybee Pyramid	The most frequently mentioned terms	Typical exercises
Innovation	moderate presence, operational innovation, the will is there, more than creativity, no room for manoeuvre, digitalisation is the key word	important, most people do, but not at the same level
Employee engagement	basic expectation, culture shaping, honesty, empowerment, delegating leadership, not for everyone	full commitment and belief, with the exception of one company
Quality	process specifications, intolerance, guarantee of long-term cooperation, ISO above all, too many regulations, quality mindset	important operational expectation

Source: own construction

In the analysis of key performance indicators, the success of innovation is a function of human creativity, attention, teamwork, leadership and employee engagement. Nurturing succession, values to be kept in mind during the selection process, tolerance, commitment, trust and leadership by example are all prerequisites for

innovation and continuous renewal. The responses confirmed the need for creativity as a prerequisite for innovation, the commitment of staff and the respect of the rules needed to ensure quality. Although not all of these criteria were expressed verbatim in the interviews, it was clear from the responses and the underlying explanations that our assumption 3 also proved to be true.

The last question of the interviews sought to explore the thinking on sustainability. Frequent statements: complex issue, very important, new approach, funding issue, ecological footprint, distrust raises barriers. An interesting approach was expressed: aim to improve, people are a resource, if you have not chosen the best, improve it, don't 'throw it away'. A number of standard expectations were raised and these are what every manager encounters in their work. Actively implementing sustainability is often perceived as a material issue. The need for a change of attitude, education of staff, culture shaping was mentioned in several cases. The most thought-provoking response is quoted verbatim.

'Sometimes I wonder, if anything were to happen to me, how sustainable would it be to run this company? I think systems and processes are the body of the company. But there is a soul to every company, and it is the person, or the community of people, led by a leader, who holds the community together. In this way, the criterion for sustainability is that the person who created the organisation, who runs it, is always there. There should always be the right person and there should be continuity. That's why succession is very important.'

4. Discussion and Conclusion

The purpose of this research was to answer our research questions and to validate our hypotheses, which aimed to investigate the validity of leadership competencies in sustainable leadership. The research model followed the honeybee logic of Avery and Bergstein. The research method was an interview technique, which provided the opportunity to explore the reasons behind the responses using the Atlas software. We hypothesised that the managers of Hungarian organisations are only partially prepared for the basic requirements of sustainability leadership. Similar results were obtained in their study by Kantabutra and Thepha-Aphiraks (2016), who were able to identify only six elements from the Honeybee pyramid. Kalkavan (2015) and Suriyankietkaew with colleagues (2022) also found that sustainable management practices were limited in the organisations they studied. The only European study also found evidence of a mixture of Honeybee and Locust styles.

Building an organisational culture based on trust, which is a prerequisite for knowledge sharing and retention, is a major challenge. Their responses confirmed that creating this climate promotes knowledge sharing and supportive staff behaviour towards sustainability goals. In their study, Iqbal and Piwowar-Sulej (2023) investigated the mechanism of knowledge sharing for innovation. Their results show that the characteristics of sustainable leadership facilitate the external and internal knowledge sharing process, but their studies show similar results as the leadership behaviour we studied. Knowledge sharing does not work smoothly.

According to the managers' responses, the degree of innovation (which is closely linked to creativity) depends on the attention paid to human resources training, teamwork, knowledge-sharing decisions and succession planning. The above opinions confirmed our hypothesis that sustainable management thinking focuses on the potential of human resources, treating all aspects of culture as assets. Rather than maximising economic results at any cost, knowledge sharing, succession planning, continuous improvement, team building ensure a combination of acceptable success, knowledge sustainability and sustainable operation of the organisation. These ideas are supported by research findings that demonstrate a positive relationship between sustainable leadership and production efficiency, sustainable performance, organisational learning and change management (Lee, 2017; Rehman et al, 2019a; 2019b; Amani et al, 2020).

The limitations of the research are mainly the willingness of the interview subjects to respond and the time required to conduct the interviews. Further research opportunities include increasing the number of interviews and conducting international comparisons.

Acknowledgement

The research is supported by the Research Centre at Faculty of Business and Economics (No PE-GTK-GSKK A095000000-4) of University of Pannonia (Veszprém, Hungary).

References

- Al-Zawahreh, A., Khasawneh, S. and Al-Jaradat, M. (2019) "Green management practices in higher education: the status of sustainable leadership", *Tertiary Education Management*, Vol 25, pp 53–63. <https://doi.org/10.1007/s11233-018-09014-9>

- Amara, B. D. and Chen, H. (2020) "A mediation-moderation model of environmental and eco-innovation orientation for sustainable business growth", *Environmental Scientific Pollution Research* Vol. 27, pp 16916–16928. <https://doi.org/10.1007/s11356-020-08206-4>
- Armani, A.B., Petrini, M. and Santos, A.C. (2020) "What are the Attributes of Sustainable Leadership?" *Revista Brasileira de Gestão de Negócios*, Vol 22, No.4, pp 820-835. <https://doi.org/10.7819/rbgn.v22i4.4086>
- Avery, G.C. (2005) "Leadership for Sustainable Futures: Achieving Success in a Competitive World", Edward Elgar, Cheltenham UK.
- Avery, G.C. and Bergsteiner, H. (2011) "Diagnosing Leadership in Global Organisations, Theories, Tools and Cases", Tilde Publishing Prahran, Australia.
- Bradley, P., Parry, G. and O'Regan, N. (2020) "A framework to explore the functioning and sustainability of business models", *Sustainable Production and Consumption*, Vol 21, pp 57-77.
- Bulmer, E., Riera, M. and Rodríguez, R. (2021) "The Importance of Sustainable Leadership amongst Female Managers in the Spanish Logistics Industry: A Cultural, Ethical and Legal Perspective", *Sustainability*, Vol 13, No. 6841. <https://doi.org/10.3390/su13126841>
- Burawat, P. (2019) "The relationships among transformational leadership, sustainable leadership, lean manufacturing and sustainability performance in Thai SMEs manufacturing industry", *International Journal of Quality & Reliability Management*, Vol 36, No. 6, pp 1014-1036. <https://doi.org/10.1108/IJQRM-09-2017-0178>
- Casserley, T. and Critchley, B. (2010) "A new paradigm of leadership development", *Industrial and Commercial Training*, Vol 42, No. 6, pp 287-295. <https://doi.org/10.1108/00197851011070659>
- Farooq, M. (2018) "Sustainable Leadership Practices in Higher Education Institutions: An Analytical Review of Literature". In: Erçetin, Ş. (eds) *Chaos, Complexity and Leadership 2016*. ICCLS 2016. Springer Proceedings in Complexity. Springer, Cham. https://doi.org/10.1007/978-3-319-64554-4_18
- Iqbal, Q., Ahmad, N.H., Nasim, A. and Khan, S.A.R. (2020). "A moderated-mediation analysis of psychological empowerment: Sustainable leadership and sustainable performance", *Journal of Cleaner Production*, Vol 262, No. 121429. <https://doi.org/10.1016/j.jclepro.2020.121429>.
- Iqbal, Q. and Ahmad, N.H. (2020) "Sustainable development: The colors of sustainable leadership in learning organization", *Sustainable Development*, Vol 29, No. 1, pp 108-119. <https://doi.org/10.1002/sd.2135>
- Iqbal, Q. and Piwowar-Sulej, K. (2023) "Sustainable leadership and heterogeneous knowledge sharing: the model for frugal innovation", *European Journal of Innovation Management*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/EJIM-03-2022-0144>
- Kalkavan, S. (2015) "Examining the Level of Sustainable Leadership Practices Among the Managers in Turkish Insurance Industry", *Procedia - Social and Behavioral Sciences*, Vol 207, pp 20-28. <https://doi.org/10.1016/j.sbspro.2015.10.145>
- Kantabutra, S. and Thepha-Aphiraks, T. (2016) "Sustainable leadership and consequences at Thailand's Kasikornbank", *International Journal of Business Innovation and Research*, Vol 11, No. 2, pp 253–273. <https://doi.org/10.1504/IJBIR.2016.077989>
- Lee, H.W. (2017) "Sustainable leadership: An empirical investigation of its effect on organizational effectiveness", *International Journal of Organization Theory & Behavior*, Vol 20, No. 4, pp. 419-453. <https://doi.org/10.1108/IJOTB-20-04-2017-B001>
- Rehman, S., Sami, A., Haroon, A. and Irfan, A. (2019) "Impact Of Sustainable Leadership Practices On Public Sector Organizations: A Systematic Review of Past Decade", *Journal of Public Value and Administrative Insight*, Vol 2, No.3, pp 1–5. <https://doi.org/10.31580/jpvai.v2i3.927>
- Renwick, D. W. S., Redman, T. and Maguire, S. (2013) "Green Human Resource Management: A Review and Research Agenda", *International Journal of Management Reviews*, Vol 15, pp 1-14.
- Sakalasooriya, N. (2021) "Conceptual Analysis of Sustainability and Sustainable Development", *Open Journal of Social Sciences*, Vol 9, pp 396-414. doi: 10.4236/jss.2021.93026
- Suriyankietkaew, S., Krittayarangroj, K. and Iamsawan, N. (2022) "Sustainable Leadership Practices and Competencies of SMEs for Sustainability and Resilience: A Community-Based Social Enterprise Study", *Sustainability*, Vol 14, No. 5762. <https://doi.org/10.3390/su14105762>
- Taticchi, P. and Demartini, M. (2021) A Modern Definition of Corporate Sustainability. In: Taticchi, P. and Demartini, M. (eds) *Corporate Sustainability in Practice, Management for Professionals*, Springer, Cham. https://doi.org/10.1007/978-3-030-56344-8_4
- Tideman, S.G., Arts, M.C. and Zandee, D.P. (2013) "Sustainable leadership: Towards a workable definition", *The Journal of Corporate Citizenship*, Vol 49, pp. 17-33.
- Visser, W. and Courtice, P. (2011) *Sustainability Leadership: Linking Theory and Practice*, University of Cambridge ISL <http://dx.doi.org/10.2139/ssrn.1947221>
- Wijethilake, C., Upadhaya, B. and Lama, T. (2023) "The role of organisational culture in organisational change towards sustainability: evidence from the garment manufacturing industry", *Production Planning & Control*, Vol 34 No. 3, pp 275-294. <https://doi.org/10.1080/09537287.2021.1913524>
- World Commission on Environment and Development (1987) *Our Common Future*, Oxford University Press, Oxford.

How are Educators Taking the Next Steps in Leadership and Entrepreneurship

Antonio Benítez García

Entrepreneurship Enterprise Hub, XJTLU- Liverpool University, Jiangsu, China

antonio.garcia@xjtlu.edu.cn

Abstract: How are educators taking the next steps in leadership and entrepreneurship teaching concepts? In recent years the development of leadership as a concept has taken different meanings in the educational field. The following paper will explain some practical approaches on how this concept it's been addressed in the classroom and outside in a different environment, as well as the settings of these courses to better equip the students with full understanding on a particular subject. Entrepreneurship has step up its game in fields that we were not used to see before. These entrepreneurial activities are directly linked with the leadership approach of an organization, start up, or school. Hence the importance of how to dive in into full understanding and delivery of the subject, not only through previous theories and proven concepts in particular organizations, but by the students putting themselves in a position of action, so that they can put in practice the knowledge applied. The author will examine responses of the students in entrepreneurship and leadership courses, from a University in China, from different majors, where cultural variables may be applicable as well. The study will have a qualitative approach, which will shed some light in the current practices from students and academics approach to the delivery of these subjects, and how to create a better learning environment incorporating theory and action plan, considering their major program and path in their own school curriculum. This paper aims to develop some understanding of innovative forms and approaches applied in Education, through the way of delivery some of the most important courses like Leadership and Entrepreneurship, since these courses could ultimately be applied to every sector of an industry.

Keywords: Leadership, Education, Entrepreneurship, Management, Studies, University, Approaches

1. Introduction

The following paper will elaborate on a recent action-research project, which was undertaken this current semester during my delivery of the course for the module of Corporate Entrepreneurship, at the Entrepreneurship Enterprise Hub in a University in China. The purpose is to critically reflect on the learning and professional development from conducting enhancement projects in a range of different settings, which will benefit the learning environment by experiencing different techniques and new teaching methodologies. This paper will carry out an extensive action research project that reflects on my own teaching practice and engages with pedagogic improvement, so that based in the results obtained, we can have a better idea on where to make some adjustments and take action in the future interventions (on-action, Schon 1983).

The paper will extensively review relevant literature and models for learning, and apply them to a wide range of change and improvement within a teaching context, which will benefit the students learning process since the results are tacit and more practical for increasing the understanding, not only during the classroom but beyond. This will lead to a constant reflection of the new knowledge acquired.

All of the above will critically reflect as well on the learning process, in the context of the Professional Standard Framework that is encouraged in this institution (UKPSF).

Action research is a type of research in which educators, rather than academics, inquire to their teaching practices, examine the results of these inquires, and learn how to effect positive change in classroom environments. Educators can work alone or collaboratively, and can conduct their research at the classroom, school, or other institutions. This will take a practical approach from the educator standpoint, where either during the lectures or tutorials, the results of teaching practices will rise to the surface, acknowledging some successful techniques and some others still with some room for improvement. This action-research is very interesting due the level of engagement increased by applying different tools and techniques. Although some of the schools taught in these examples are very technical, from a different range such as robotics, chips, manufacturing, cultural technology, among others, the use and understanding of soft skills in the entrepreneurial and corporate world seems to be well received among the student's community, as we will analyse in the following paper:

2. Literature Review - Justification

Previous research has demonstrated that different teaching techniques will vary according to different variables, and that the knowledge can be delivered depending on a wide range of circumstances which could enhanced the learning experience for our audiences. It is important to understand and read the room accordingly, the

setting for “inserting” the knowledge might constitute a successful learning experience, or not. Educators have to continuously improve teaching skills, methods, and techniques so that the students can enjoy a fruitful interaction during the class sessions. Teachers must become highly skill problem solvers while engage in complex teaching-learning activities (Henderson, 2001)

A successful teaching session cannot happen without an audience willing to participate and engage in the content delivered. For this reason, it is important to be aware of the students’ lens approach (Brookfield 1995), how are they interpreting and learning, and must importantly how do we know? How can we measure that? For this and more reasons, we should constantly adjust and look into evaluation activities and mechanisms that can help us to create a better teaching experience, as reported in the Professional Standard Framework from the UK, UKPSF, areas of activities, core knowledge, and professional values (See appendix A2, K2).

According to Brookfield’s Four Lenses (1995), one of the lenses is Colleagues’ perceptions, which we should seek in order to enlighten aspects that could be hidden. This is fundamental as well, given that many educators teach the same groups of students and their comments can be very insightful, enlightening some hidden corners that we might or might have not been aware of. It is a continuous effort that aims to understand different reasoning in a same classroom. Throughout their career, educators must continually refine their skills in the general areas of program designing, lesson planning, and classroom management (Henderson, 2001) (UKPSF: K1, K2, K3, K4, K5)

In order to understand the different approaches that an educator can take, it is important to highlight some of the possible scenarios where the students could be engaged or simply taken as audience, for example in scenarios where there is more engagement a research-tutored approach, or a research-based approach might be ideal. Where the students participate more as an audience, a research-led approach, or research-oriented approach could be used.

Zamorski (2002) discovered two ways students learn about research: being an audience or “recipient of research”, and being actively involved as student researchers. According to Zamorski (2002), academics staff discussed and interpreted the research-led teaching in terms of two principal pedagogical models: teaching informed by recent research outcomes, and teaching incorporating research as part of course content and pedagogy. (See figure 1)

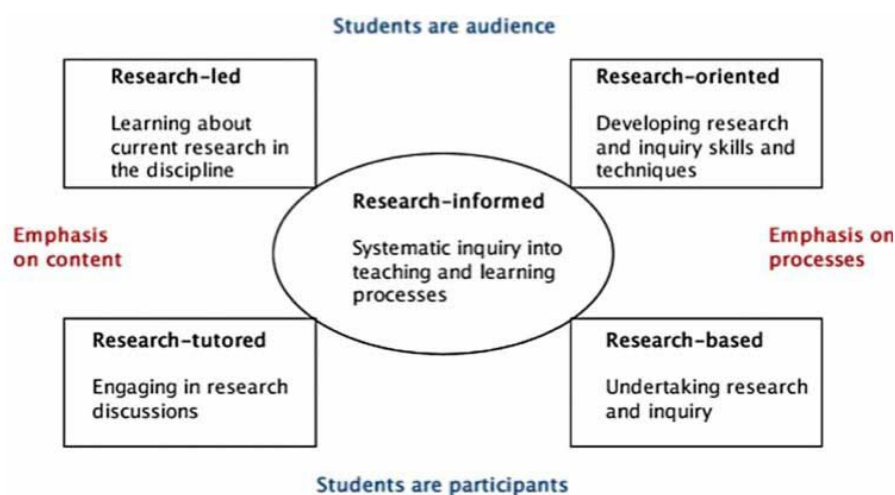


Figure 1: Research-informed

As we observe, different approaches can be taken when we incorporate our findings into the classroom. An ideal scenario could be a balance where students could also participate increasing their critical analysis about a specific topic, including not only research-informed, but tailor-made case studies according to their major where different techniques of encouragement could also be used.

Another approach is Inquiry-based learning, an educational strategy in which students follow methods and practices similar to those of professional scientists in order to construct knowledge (Keselman, 2003). It can be

defined as a process of discovering new causal relations, with the learner formulating hypotheses and testing them by conducting experiments and/or making observations (Pedaste, Mäeots, Leijen, & Sarapuu, 2012).

Project-based learning is another approach to increase not only the educational goals, but also the interaction and network among the students, which is something very useful and necessary in the Corporate Entrepreneurship module. In fact, their first summative assessment aimed to incorporate this precise element which increases their soft skills and experience, needed for overcoming obstacles in the students' future endeavors. A reflection of the experience can anticipate future issues from the same category (Debowski 2013)

3. Research Question

Numerous researchers and educators have tried to address the issue of student engagement and interaction.

Mostly based on the Self-Determination Theory (SDT) (Deci & Ryan, 2000) which categorizes student's motivation for any given task into intrinsic and extrinsic categories:

- Intrinsic: Moved to act for the fun or challenge itself, showing interest, excitement, self-esteem, creativity, etc.
- Extrinsic: Moved because of external stimuli—rewards, positive feedback, good grade, or to avoid unpleasant consequences

According to some studies this self-determination for constant inflow of knowledge could be linked to new teaching techniques, hence the research question:

RQ. When new teaching technologies are applied, would the students increase their participation and engagement?

The following methodology will explain how the instructor reached the results and how data collection was undertaken.

4. Methodology

Based in the previous literature is safe to say that internal and external stimuli will reflect on the participation in a given classroom. The notes of participation and engagement from students were not only taken from qualitative insights and observations from my own reflections and other tutors, but also from quantitative method by sharing a specific questionnaire with the students of the Corporate Entrepreneurship course. The survey reflects on questions intended for understanding and comparing what we considered were good teaching tools with the actual results by the students. By combining both methodologies we were able to understand to a higher degree how the students can further engage and participate during and after the class (in-action on-action, Schon 1983) when new teaching technologies/methods are applied, which is important for self-improvement, as observed in the Self-Determination Theory (SDT) (Deci & Ryan, 2000).

5. Results

Firstly, a new tool was incorporated during the course, with the objective of continuing deepening on practical examples and theories and how these can be used in the real world. A Business and Entrepreneurial podcast was added to the Learning Mall Online platform (LMO), this audio tool contributed not only for increasing the level of understanding English, but most importantly, for discovering how some leadership theories were used and how people in the business world can navigate different scenarios by adapting to an ever-changing environment, which is crucial for this module of Corporate Entrepreneurship. A short series of 3 episodes were uploaded and shared with the students, showing the following results:

Interestingly, each one of the 3 episodes had over 500 views from students, for example episode 1 with a total of 769 views (see below figure 2). Considering a combined number of 350 students we can see that this new tool was well received, regardless of being only a formative task, not a summative assessment. After each episode was released, some of the discussions and interaction with the students would relate to specific decision-made processes, entrepreneurial and leadership styles in the podcast, for example what other approach would have been good to use in A or B scenarios, with X or Y circumstances.

Viewing an episode from: Steve Jobs - The Enlightenment

[Episode](#)
[Comment](#)
[Views](#)

Title	Episode 1 Steve Jobs - The Enlightenment
Summary	Ep.1 Traits and styles from Steve Credits: Business Movers Podcast
Media file	
Duration	40 minutes 34 seconds
Author	Antonio Benitez Garcia
Created	Monday, 13 February 2023, 20:58
Last updated	Friday, 17 February 2023, 10:08
Total views	769

Figure 2: Audio Podcast Views

It is meaningful to see how this trial of adding new tools and teaching methodologies sparked high interest in the students. From observations and data collection of the actual survey it was noticed that besides the audio podcast, other sources like videos or documentaries related to the topic were popular as well (see figure 3).

This newly incorporated tool as a formative teaching method captured the attention of students and triggered their curiosity by analysing different forms in which knowledge can be shared too. This reminds me the quote from Biggs (2002) “Students learn what they think they will be assessed on”. However, as we progressed through the course this formative element was added in a form of audio podcast (Dixon and Worrell, 2016), instead of summative assessment, where they would learn for achieving a grade (UKPSF, K6). What was good about the experience (Evaluation Step, Gibbs 1988) is that some students could indeed engage in a formative assessment as well.

What methods have you incorporated ? Core knowledge (K's)			What methods would you like be incorporated by the teacher? (K's)		
ANSWER CHOICES	RESPONSES	NO.	ANSWER CHOICES	RESPONSES	NO.
Books from library or my own books	60.0%	39	Books from library or others	40.62%	26
Videos or documentaries about the topic	76.92%	50	Videos or documentaries about the topic	82.81%	53
Audio podcast	30.77%	20	Audio podcast stories about the topic	42.19%	27
AI Technology such as ChatGPT or others	40.0%	26	Other (please specify)	1.56%	1
Other (please specify)	3.08%	2			
TOTAL		137	TOTAL		107

Figure 3: Teaching Tools and Methodologies

Another interesting result was that different schools of the Entrepreneurial Hub EEH, might have different preferences in terms of their approach towards the study style. For example, some school might prefer a more traditional teaching approach, whereas some might prefer an approach closer to the actual experience of the instructor, in terms of their knowledge, and how beneficial is the learning process for the student. This can be confirmed by observations as well. It is therefore that the tutorials could have a tailor-made case study, or an activity for that particular school (see figure 4).

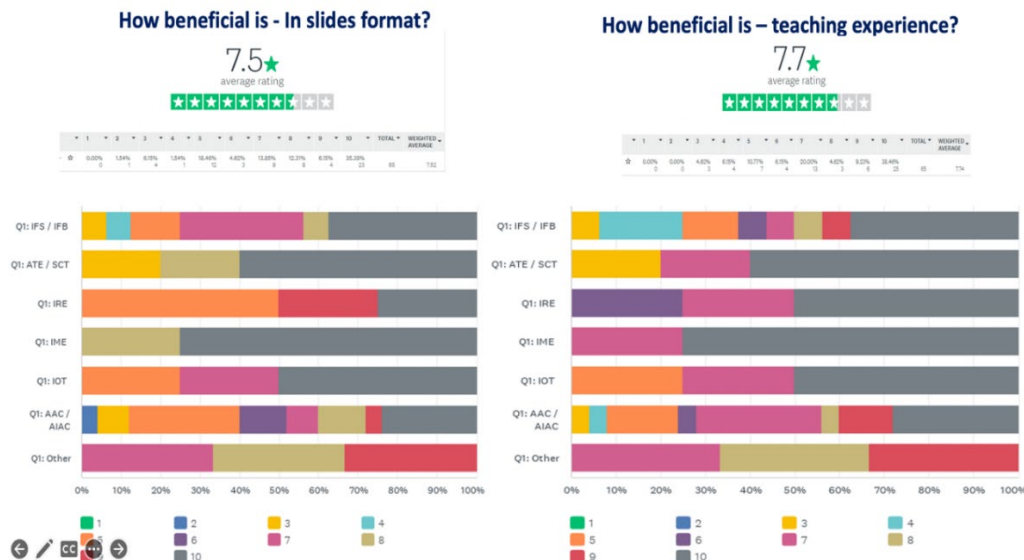


Figure 4: Breakdown by School

These are some of the examples of the results that help the instructors to constantly adapt to new teaching techniques and methodologies.

Another information retrieved is the interest about case-studies, research-led discussions, and project-led discussions, where students are willing to show their point of view mainly during tutorials where the groups are more segmented and project-led, as they had to discuss about their own practical experience and obstacles during their course work and summative assessment, this proved to be helpful and insightful.

It is important to mention that all the discussions would only work with the right setting in an open environment, where students are able to share their perspective. The instructor would have to put emphasis in maintaining and promoting participation in higher education and equality of opportunity for learners (V2), respecting individual and communities' values (V1) and acknowledging in a wider context the need for professional development (V3, V4).

This is particularly important because if we lack this element, the flow of knowledge would have more obstacles. Gratefully, we experience a good environment setting where students were comfortable to express and share their critical analysis on a given topic. (See figure 5).

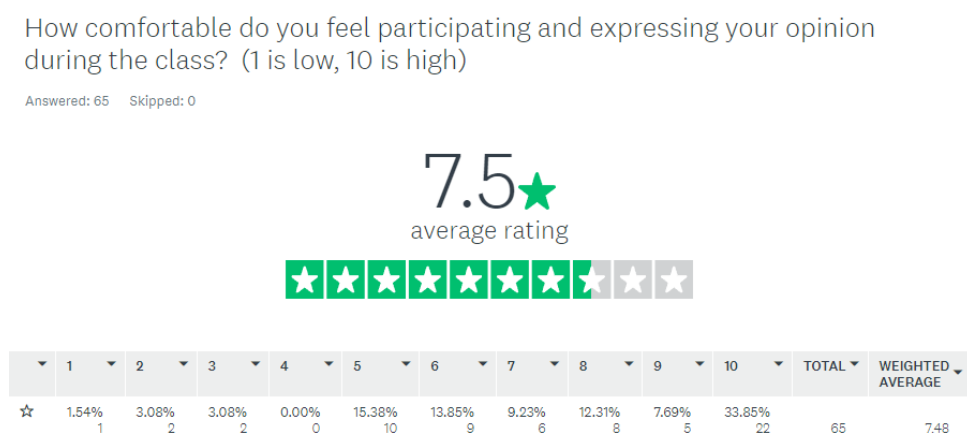


Figure 5: How Comfortable is Participation

6. Discussion - Conclusion

According to the feeling's evaluation analysis, based on Debowski (2013), we looked into what is successful having a wider potential, and what has a room for improvement, some suggestions were raised about the possibility of incorporating subtitles to the "audio". However, this audio would have to turn into a video to be

able to add subtitles for a better understanding. Therefore, a full understanding of the audio podcast was a bit challenging since English is not the student's native language for the majority.

As we see below (figure 6) reflects what environment would increase the participation of the students during the class:

	1	2	3	TOTAL	SCORE
If I fully understand the topic	20.00% 12	53.33% 32	26.67% 16	60	1.93
If I relate to the topic and I am interested in it	38.33% 23	28.33% 17	33.33% 20	60	2.05
If I speak better English	41.67% 25	18.33% 11	40.00% 24	60	2.02

Figure 6: Score for Increasing Participation

According to the student's survey, we can observe that the third sentence "speaking better English" and the second one "interest in the topic" would increase the participation in classroom. Hence the importance of the professional values (V1-V4) stated in the Professional Standard Framework.

The right combination of the above tools will create a solid environment, where when new teaching technologies are applied, they could lead to a wholesome learning experience. As stated by Fogg's (2009) behavior model: motivation, ability and triggers (cited in Muntean, 2011): "motivation and ability alone are not enough to determine a behavior. A certain behavior needs a *trigger*, something to tell the user to complete the action in a certain moment, when users have both ability and motivation, it functions as a reminder." For example, having extra formative tasks that continue sparking their curiosity beyond the classroom.

As part of the conclusion in the reflective cycle (Gibbs 1988) it is important to be aware of the needs of each student and become a tool so that they can find their own course, recognizing the implications of a professional practice (V4).

Based on the action-research results, it is suggested to continue applying the tools that benefit the best to the students, improving the rooms for opportunity and designing and planning more learning activities (A1), constantly supporting the learning process, for not only summative but also for formative assessments, providing feedback to the learners (A2, A2). Effective learning environment and guidance, as well as engaging in continuing professional development in subjects and pedagogic elements (A4, A5).

"Lecturers involved in their own professional development as teachers by investigating and reflecting on their own practice"

We have also seen that the subject material itself (K1) has to apply appropriate methods for teaching and learning, at the subject level and at the academic program level (K2), this will generate a cohesion among subjects, and a good strategy for syntegrative education. Constant methods for evaluating the effectiveness of teaching will only lead to increasing the quality of our teaching, and ultimately of the University's. These methods used (K5) focused on the learning experience and quality assurance of the students (K6). These activities definitely promote higher participation and opportunity for the learners (V2), acknowledging a wider context which is crucial for the students in our major, having an entrepreneurial mindset will set them apart and increase the opportunity of insertion for a better society, recognizing the implications attached (V4).

The main question for this action-research was significant, focusing on teaching and learning practices that will have impact on students' behavior and achievements. It was also manageable, bringing to surface many interesting insights from the results. The practical side of this action research is that the question is contextual, as it can be embedded in the day-to-day work of the instructor rather than a specific extra project, which could also be added, if it is in the interest of the learning process.

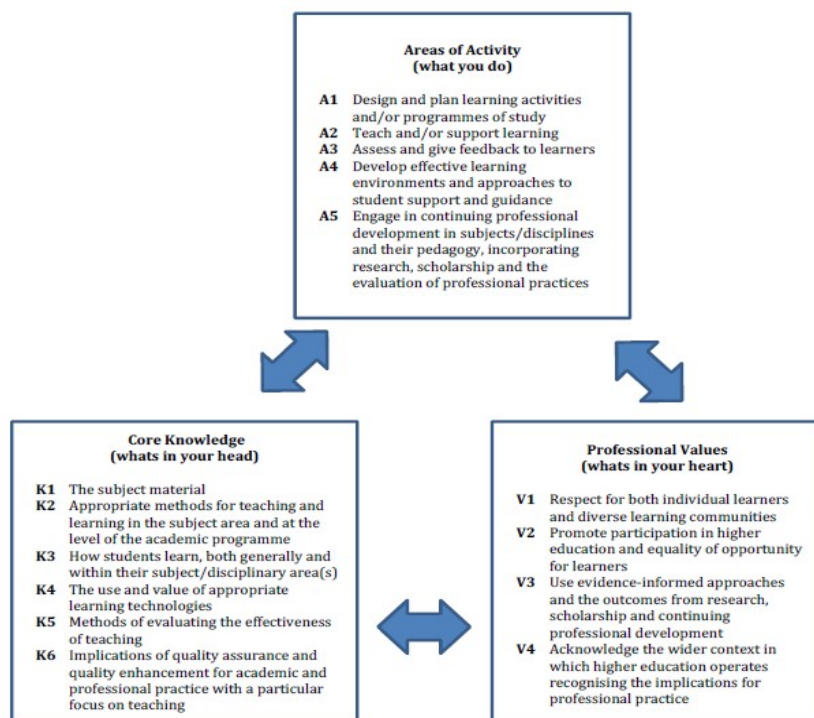
Overall, the action-research proved to be very helpful for my future class preparations and interaction with the students.

References

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives: Complete edition, New York: Longman.

- Beckman, M and Hensel, N (2009) Making explicit the implicit: defining undergraduate research, *Council on Undergraduate Research Quarterly* 29(4), 40-44
- Brew A. (2003): Teaching and Research: New relationships and their implications for inquiry-based teaching and learning in higher education, *Higher Education Research & Development*, 22:1, 3-18
- Biggs, J. (2002). Aligning the curriculum to promote good learning. Proceedings from LTSN Generic Centre *Constructive alignment in action: Imaginative curriculum symposium*
- Brookfield, S. (1995). *Becoming a critically reflective teacher*. San Francisco: Jossey-Bass.
- Crothers, K. (2013). Action Research. Research Starters: Education (Online Edition).
- Fareh, S., & Saeed, A. T. (2011). The teacher as researcher in the context of language teaching. *Procedia - Social and Behavioral Sciences*, 15(3rd World Conference on Educational Sciences - 2011), 153-159. doi: 10.1016/j.sbspro.2011.03.066
- Gibbs, G. (1988). *Learning by doing: A guide to teaching and learning methods*. Oxford: Oxford Brookes Further Education Unit.
- Healey, M. (2005) Linking research and teaching: disciplinary spaces, in R. Barnett (Ed) *Reshaping the university: new relationships between research, scholarship and teaching*, 30-42. Maidenhead: McGraw Hill/Open University Press
- Healy, M. and Jenkins, A. (2009*) Developing undergraduate research and inquiry, Higher Education Academy, York. [Online, <https://www.heacademy.ac.uk/node/3146>]
- Henderson, J. G. (2001). *Reflective teaching: Professional artistry through inquiry*. (3rd ed.). New Jersey: Merrill/ Prentice Hall.
- Kolb, D. A. (1984). *Experiential learning: Experiences as the source of learning and development*. London: Prentice Hall
- Levy, P. (2009) *Inquiry-based learning: a conceptual framework (version 4)*. Centre for Inquiry-based Learning in the Arts and Social Sciences, University of Sheffield. Available at: <http://www.shef.ac.uk/cilass/resources>
- Mertler, C. A. (2016). *Introduction to Educational Research*. Los Angeles: Sage Publications
- Postman, N. & Weingartner, C. (1971) *Teaching as a Subversive Activity*, Dell Publishing, New York.
- Raubenheimer, C. D., & Jennifer L., M. (2005). Using Action Research to Improve Teaching and Student Learning in College. *Journal of College Science Teaching*, (6), 12.
- Robertson, J. and Blackler, G. (2006): Students' experiences of learning in a research environment, *Higher Education Research & Development*, 25:3, 215-229
- Schön, D. A. (1984). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Schultz, L. (2005, January 25). Lynn Schultz: Old Dominion University: Bloom's taxonomy. Retrieved March 5, 2005, from http://www.odu.edu/educ/lischultz/blooms_taxonomy.htm
- Trowler, P. & Wareham, T. (2008) *Tribes, territories, research and teaching*:
- Zamorski, B. (2002) Research-led Teaching and Learning in Higher Education: A case, *Teaching in Higher Education*, 7:4, 411-427, DOI: [10.1080/135625102760553919](https://doi.org/10.1080/135625102760553919)

Appendix



Exploring the Influence of Cultural Intelligence on the Cross-Cultural Adaptation of Chinese Expatriate Workers: A Phenomenological Analysis

Vic Benuyenah and Mona Mustafa

Birmingham Business School, University of Birmingham, Dubai/UK

vbenuyenah@bham.ac.uk

m.mustafa@bham.ac.uk

Abstract: This study delves into the experiences of a small section of Chinese expatriate workers in the UAE, investigating the roles of Guanxi and cultural acclimatisation as critical adjustment factors. Using a phenomenological technique, we explore the influence of cultural intelligence on the cross-cultural adaptation of workers in the construction sector. As part of a more extensive study, the initial findings suggest that Chinese migrants resort to reconnecting with their families back home to mitigate the linguistic and cultural challenges faced whilst abroad. At the same time, feelings of isolation and loneliness were dealt with through recreational activities and building social capital.

Keywords: Cultural adaptation, Migrant workers, UAE labour market, Filial responsibility, Guanxi, Translanguaging

1. Background and Literature

Since its inception in 1971, the United Arab Emirates (UAE) has seen stratospheric levels of development in almost all its sectors, particularly the building and construction, tourism and hospitality, renewable energy and the financial sectors. The exponential growth in the country has called for external labour to be drawn in from other countries, especially India, Bangladesh and China. Chinese workforce, however, is unique in terms of competence, culture and linguistics skills, and therefore, their participation in the GCC labour market draws research interest. The uniqueness of Chinese cooperative culture, often linked to the principles of Guanxi, has been previously studied and linked to organisational citizenship behaviours and cultivating social connectedness (Guo et al., 2018; Lin & Ho, 2010).

In contrast to the scant available studies on cultural adjustment in the UAE, researchers have shown more interest in the transition of the Chinese economy over the years into what some have called an emerging economy (Jonnalagedda & Saranga, 2019; Popkova, 2017). Equally, Chinese work overseas has attracted attention among academics, primarily because of the contrast between the Confucian values within the Chinese community (Benuyenah, 2021) and Western and other cultural values (Chen et al., 2002; Zhang & Yin, 2020) yet, not much research has been explicitly reported about the interaction between Chinese culture and work values in the GCC region. Such a low interest in scholarly work on this subject may partly be because most of the economic development in the GCC is relatively recent (Matsumoto, 2019). Despite this, Zhang (2023) reports that the total number of Chinese living in the UAE has jumped from around 7,000 in 2000 to 400,000 in 2023. This sudden jump in Chinese presence in the UAE is not met with the required volume of research that can help practitioners understand the influence of culture, its assimilation and the adjustment experiences of the migrants. As both China and the GCC continue to play a vital role in the expansion of global trade, research into how human interaction in the labour force of both regions becomes even more dire. A crucial aspect of such interaction is embedded in the principles of Guanxi and the cultural preferences in some Gulf cities such as Dubai and Doha.

Although various interpretation of Guanxi exists, what is common among most of such definitions is the principles of personal connections, trust and reciprocity, which helps hold the cultural fabric together among the Chinese population both at home and abroad (Charoensukmongkol, 2021; Xian et al., 2019). Another essential aspect of the Chinese culture is filial responsibility which can be either authoritative or reciprocal (Wang et al., 2023). According to Wang et al. (2023), filial responsibility refers to children's ethical and cultural expectations towards their parents' upkeep. Whereas filial duty may diminish when working children migrate overseas, once in their new work environment, it is Arabic values that tend to define the workplace culture and labour market operations in the Gulf region (Aarthi & Sahu, 2021; Elbanna & Fatima, 2022); although bigger cities tend to have a growing presence of other cultures, mainly from Southeast Asia, Africa and Europe. The contrast between Chinese traditional values rooted in Confucian ethics (Benuyenah, 2021) and the Arab culture, morphed by Islamic values, presents an exciting mix of hypotheses to be examined by contemporary researchers. Yet only a few studies have examined the confluence of Sino-Arab relations (Yao, 2014) especially

migrant employees and their cultural adjustment in the Gulf region. In this study, we use in-depth interviews to explore the experiences of Chinese migrant workers in the UAE. To do so, we espoused two research questions:

RQ1: How do Chinese migrants adapt culturally while living abroad, and what does this mean for their identity and sense of belonging?

RQ2: How do Chinese migrants balance family expectations from their home country with their new life abroad, and how does this impact their well-being and family dynamics?

2. Methodology and Initial Analysis

We adopt a phenomenological approach by conducting in-depth interviews with 19 Chinese migrant workers. All the respondents were working in the UAE and belonged to the same organisation at the time of the study.

A critical step of identifying and recruiting the respondents was considered. As an inductive study, we aim to construct meaning from the respondents making sense of their own lived experiences whilst working abroad; therefore, only workers with good spoken English abilities were recruited. The first author used her connections in the region to identify 19 respondents through snowball sampling in line with the constructionist convention (Saunders et al., 2012). Snowball sampling allows for trust and confidentiality when dealing with an exclusive, hard-to-reach population, particularly when the topic is considered sensitive. According to Biernacki and Waldorf (1981), snowballing, also called referrals, has long historical roots in phenomenology. This practice was endorsed by Glaser and Strauss (1967) more than five decades ago and used by phenomenological researchers ever since; but more significantly by Zhong (2016), who recently used the technique in the study of migrant workers having previously been recommended by Wenzel (1981).

The coding process was inductive and based on the reflective thematic analytic approach, as Braun and Clarke (2006) described. The analysis began with a deep immersion into the interview transcripts to familiarise with the data. After this, the first set of codes was developed inductively, with the researchers giving labels to groups of texts and sentences in the interview transcripts.

To analyse the interview data, we identified three prominent themes relating to how the respondents coped with their working life in the UAE: (1) Language and Cultural Integration, (2) Building Social Capital and Guanxi, (3) Family Support. These initial themes were derived from the preliminary coding structure presented in Table 1 below:

Table 1: Sample of the Initial Codes and Corresponding Interview Extracts

Interview Extracts	Initial Coding
When I arrived, the company sent a colleague from the HR department to pick us up.	Airport Pickups
Actually, she didn't like the life here when she came here. First the weather, and also because of the family issue. But now she's adapting a lot here.	Quick Adaptation
Now I have so many friends outside. I'm doing procurement. Every day I'm contacting so many market people.	Guanxi and People Connection
They were very worried about it. In 2012, just four colleagues came here. My parents weren't happy.	Unhappy Parents

Notes: As this is an initial study, the final paper will be presented with fuller analysis, tables, and Nvivo generated graphs and models.

3. Results and Discussion

We combine the results and discussion session, as is often the case in qualitative research, because this allows for narrative flow and a more precise interpretation of the data but also, more importantly, with an intent to develop a pattern (Creswell, 2003 p.18). Rooted in phenomenological tenets, the study's findings revolve around the two research questions presented in the earlier section.

3.1 Research Question 1

To explore the first research question: "*How do Chinese migrants adopt culturally while living abroad, and what does this mean for their identity and sense of belonging?*", we conducted a thematic analysis to identify common

phrases (See Figure 1 for a summary). Chinese migrants in the UAE face a number of challenges in relation to the culture and language variations compared with the homogeneous environment where they emigrate from. First, they faced communication barrier as it was difficult to communicate in Arabic. They also reported difficulty in learning the Arabic language that would have enabled them to be able to communicate with the locals and other Arabic-speaking comrades. Similar challenges were reported among Chinese students studying programmes in English-speaking countries (Ma, 2020). Besides the difficulty in learning and speaking Arabic, those who could speak English reported that the accent variation among team members limited effective communication between fellow workers. The participants also reported being culturally isolated while working in the UAE, as it was challenging for them to integrate their culture with the prevailing culture in the UAE. It is unsurprising that both culture and language have been reported as temporary challenges among the migrant workforce as often, language skills can help in integrating societies. The language issue in Figure 1 can particularly be linked to translanguaging, a phenomenon often faced by migrants (Dryden et al., 2021) and earlier studied among students of English as a Foreign Language (EFL) (Fang et al., 2022). Translanguaging is a sociolinguistic phenomenon that refers to the dynamic and flexible use of multiple languages by communities to convey meaning (Rosiers et al., 2018); and is often common in countries such as the USA and, recently, the United Arab Emirates. It is common among migrant workers in the UAE to *translanguage* as they navigate their daily work life, resulting in different forms of English but all conveying identical meaning to the users of the versions of the English language. Earlier work on the importance of linguistic harmony among employees in the hospitality sector was presented by Fan et al. (2021), resonating with the current observation by Participant 5 who reflected on the consequences of translanguaging:

LINGUISTIC DISSONANCE: I think the culture. Even though I've been here 10 years, I can't say almost anything in Arabic. Even though this is an Arabic-speaking country, we have very limited opportunity to speak Arabic. Number two is the culture. Even though we're here, it's like we're still living in a small Chinese village, or a small Chinese town. That's the difficulty for Chinese people, I think. – Participant 5

TRANSLANGUAGING/LINGUISTIC RELATIVITISM: Everyone here speaks English, but everyone speaks a different English...I think their pronunciation is very strange. I cannot understand it. – Participant 2

Linguistic relativism is a common phenomenon that has links with migrant identity, acculturation and integration (Sáenz- Hernández et al., 2020); therefore, it is vitally important to view the comments '*I think their pronunciation is very strange*' as a way of identifying a group of other migrants (perhaps clients) whose English is unintelligible. As communication at the workplace is a two-way channel, it is possible that other employees may not also understand Participants who reported linguistic difficulties; such constraints may not only be limited to socialisation but potentially also to productivity.

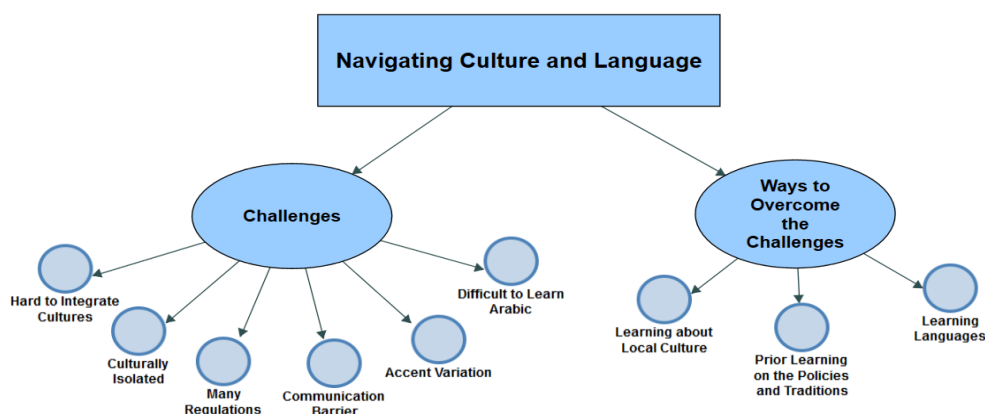


Figure 1: Nvivo Concept Map on the Experience with UAE Culture and Language

To navigate the cultural terrain while within the UAE, the Chinese migrants resorted to learning the local language and about the local culture in the UAE. Others reported that they had learnt about the culture and tradition of the UAE prior to travelling to work abroad, indicating how central the Arabic culture and language are for a vast number of respondents (See Figure 2)

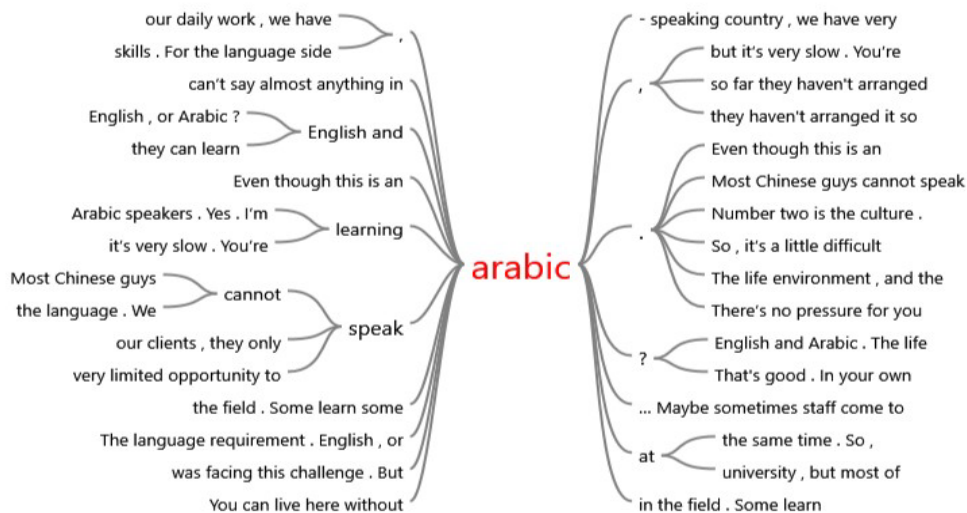


Figure 2: Word Tree analysis of Arabic Language as being central to working in the UAE

3.2 Research Question 2

The second research question framed around Guanxi (Buckley et al., 2006) and Confucian philosophies (Benuyenah, 2018) attempted to explore how Chinese migrants balance family expectations from their home country with their new life abroad and how this impacts their well-being and family dynamics. Depending on the participant, the family could be considered supportive or concerned and against the migrants' move to work in the UAE. For instance, the parents of some of the migrants did not want their children to move to a foreign country as they did not want to miss their children. Participant 9 commented; *'My parents were very worried about it. Because this is my first time going overseas, to work in another country, and this is my first work. They were very worried about it. In 2012, just four colleagues came here. My parents weren't happy.'*

Besides being worried about their child moving to the UAE, respondents also indicated that their parents were concerned about loneliness. Loneliness has to be interpreted from a slightly different context, as China had a one-child policy until very recently, magnifying the essence of filial responsibility and parental love (Wang et al., 2023). Despite the noted concerns, other parents who did not bother so much about filial affection or collectivist bonds were supportive of the career and life choices made by the migrants to seek work abroad.

FILIAL AFFECTION: '...they didn't want me to come here because I'm alone in my family.' – Participant 3

COLLECTIVIST DECISION: 'I talked to my parents and my wife. My family supported me. They thought perhaps I can learn a lot of knowledge in Dubai.' – Participant 4

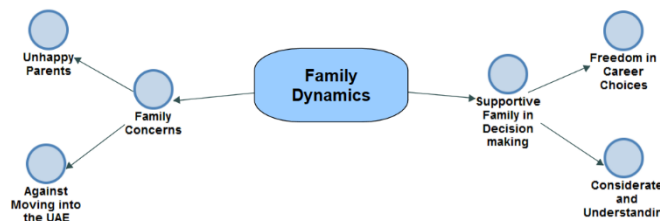


Figure 3: Family Dynamics as experienced by the Chinese migrants in the UAE

An important discovery in this study is how migrant workers navigate the terrain of family dynamics. Two main perspectives emerged among interviewees regarding family concerns and how some perceive their families as being supportive (see Figure 3). Those who indicated family concerns further specified that their parents were either unhappy with or opposed to their move to the UAE. Conversely, those who felt supported in their decision to move to the UAE indicated that they were given freedom and choice or that their families were considerate.

While in the UAE, the migrants reported facing emotional difficulties like homesickness and loneliness. Others were affected in significant ways, indicating that they could not keep in touch with their loved ones regularly or provide support to their loved ones back home.

FILIAL AFFECTION: 'I think it's very difficult for us. I'm the only one in my family. I'm an only child. Sometimes I feel homesick, and I miss them.' – Participant 1

Some respondents reported that despite knowing they would be posted overseas, they were unaware of the exact location (UAE).

BUILDING RESILIENCE: 'Yeah. But I didn't know the country...Yeah. I think the UAE is a better country. Most of the countries are in Africa... In all construction companies, the work environment is very hard for some of the other countries, especially in Africa.' – Participant 7

The above account compares work in the UAE with similar jobs elsewhere in terms of difficulty. This comparison seems to suggest that although respondents were missing home, they distorted such emotion by reasoning that their current situation could have been worse. As noted earlier, most migrant workers seek social opportunities in an attempt to combat loneliness, however, in this instance, the tool used by Participant 7 is building resilience to help overcome the challenges faced in the UAE. Earlier systematic work pointed to the link between the concept of resilience and psychosocial interventions among migrant populations.

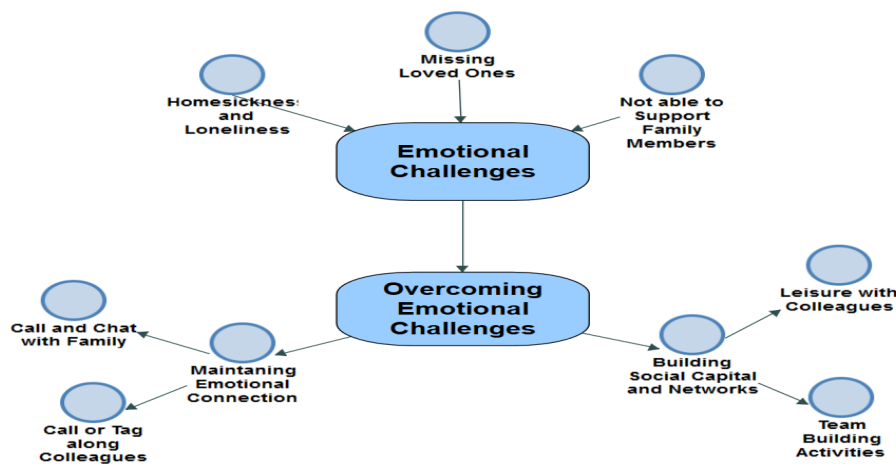


Figure 4: Overcoming Emotional Challenges by Chinese migrants in the UAE

A common theme across the interviews is the emotional pressure linked to homesickness and loneliness – See Figure 4. These pressures are common among migrants who travel to other countries particularly where their native language is not spoken. As per the account of most of the migrants, language and residential location were barriers to overcoming some of the highlighted challenges (*i.e., missing loved ones, not able to support family and loneliness*)

To overcome these emotional challenges, the migrants maintained emotional connection with their loved ones and family through consistent communication. Additionally, the migrants decided to build social capital within the UAE by making friends from work colleagues and the locals – see Figures 4 and 5.

Despite the attempt to mitigate respondents' loneliness by making new friends, such efforts were not enough to fix the attachment gap they were experiencing. See an extract from Participant 1's account below:

ATTACHMENT THEORY: 'I will call them three times per week. And when the weekend comes, I will chat with them online. We see each other face-to-face.' – Participant 1

It appears that the Arabic language being a more forceful barrier to making local friends in the UAE, as illustrated earlier in Figure 2, compounds the emotional challenges summarised in Figures 4 and 5.

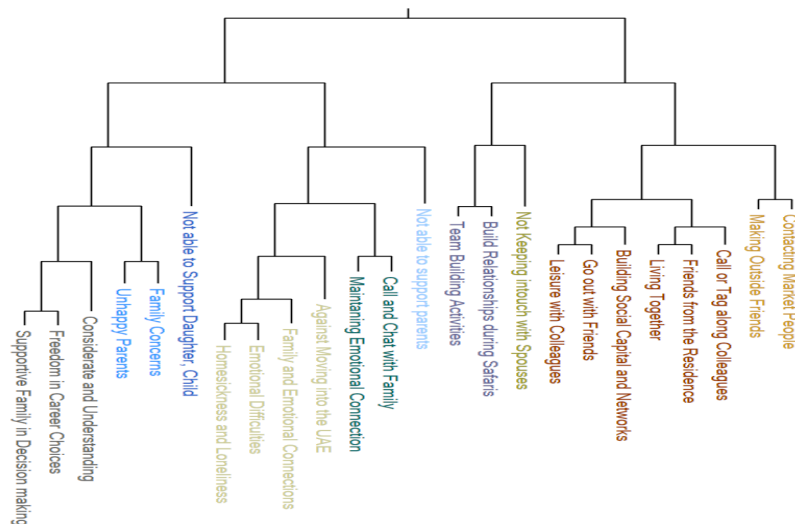


Figure 5: Nvivo word cluster of challenges and coping strategies

Thus, respondents cannot speak the language of people closest to them at the workplace in the UAE and, therefore, have to resort to calling home and chatting with families at the weekend instead.

COLLECTIVIST GAP: 'I try to bridge the gap by calling them regularly and spending weekends chatting online. But it's just not enough to fill the void of not being there in person to fulfil my filial duties.' - Participant 4

According to Trompenaars & Hampden-Turner (1997), communitarian cultures (China) prioritise the group over the individual and perceive constant connection with the group as the bond that holds society together. Distance from loved ones, therefore is a poor antidote for societal and family cohesiveness, as exemplified in the voice of Participant 4.

Overall, migrants' accounts of their lived experiences can be summarised into the challenges they faced and the solutions they crafted to deal with them. The challenges relate mainly to cultural incompatibility, linguistic challenges, parental disapproval and fear of filial disconnect. The accounts suggest that respondents could deal with some of the issues through cognitive distortion by rationalising their condition, learning the new language and reconnecting with families back in China.

4. Limitations and Future Directions

The homogeneity of our sample, comprising mainly of Chinese migrant workers, mitigates the generalizability of the findings at this stage. As a very progressive labour market, the UAE has millions of workers from across 193 countries in the world, therefore, it is impossible to suggest that the challenges mentioned by our respondents are the same for other workers in the region. For example, a vast majority of workers in the construction industry from the Middle East and, to some extent, India and Pakistan may speak or understand Arabic, therefore, are not likely to face the same challenges as their Chinese counterparts. Future studies can consequently explore the experience of other nationals in the region with much more extensive coverage across different industries.

As a qualitative exploratory study, this paper has limitations regarding making predictive claims. Our objective is not to construct a theory or imply causal effects; instead, we aim to gain insight into the lived experiences of a segment of the labour force in the UAE. Therefore, any comments or interpretations presented in this paper should be understood as contributing only a partial perspective to our understanding of Chinese cultural adaptation and organisational behaviour. Subsequent studies can build on the current findings by formulating hypotheses that test the relationship between filial responsibility and individual performance or the mediating role of linguistic competence and performance in overseas job settings.

5. Conclusion

This study provides initial findings on the experiences of Chinese migrant workers in the UAE. Two research questions relating to Chinese migrant workers cultural adaptability and how they balance family expectations were explored to help understand the lived experiences of the sampled participants. The findings suggest that

for those respondents who experienced cultural and linguistic challenges, reconnecting with family in their home country was an effective coping mechanism. In contrast, team-building activities and recreation provided hope and alternative happiness for those who experienced emotional difficulties.

References

- Aarthi, S. V., & Sahu, M. (2021). 'Migration Policy in the Gulf Cooperation Council (GCC) States: A Critical Analysis'. *Contemporary Review of the Middle East*, 8(4), 410–434. <https://doi.org/10.1177/23477989211028748>
- Benuyenah, V. (2021). 'Face-saving and Seasonal Gifts : Analysis of Cultural Exchanges in the Confucian Market Place'. *International Review of Management and Marketing*, 11(2), 59–66. <https://doi.org/https://doi.org/10.32479/irmm.11202>
- Benuyenah, V. (2018). Economics of Social Proximity – Measuring the Deadweight Loss of Tet Gifts. *IAFOR Journal of Psychology & the Behavioral Sciences*, 4(1). <https://doi.org/10.22492/ijpbs.4.1.01>
- Biernacki, P. and Waldorf, D. (1981) 'Snowball Sampling: Problems and Techniques of Chain Referral Sampling'. *Sociological Methods & Research*, 10, 141–163.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Buckley, P. J., Clegg, J., & Tan, H. (2006). 'Cultural awareness in knowledge transfer to China-The role of guanxi and mianzi'. *Journal of World Business*, 41(3), 275–288. <https://doi.org/10.1016/j.jwb.2006.01.008>
- Charoensukmongkol, P. (2021). 'How Chinese expatriates' cultural intelligence promotes supervisor-subordinate Guanxi with Thai Employees: The mediating effect of expatriates' benevolence'. *International Journal of Cross-Cultural Management*, 21(1), 9–30. <https://doi.org/10.1177/1470595821996735>
- Chen, C. C., Peng, M. W., & Saporito, P. A. (2002). 'Individualism , Collectivism , and Opportunism : A Cultural Perspective on Transaction Cost Economics'. *Journal of Management*, 28(4), 567–583.
- Dryden, S., Tankosić, A., & Dovchin, S. (2021). Foreign language anxiety and translanguaging as an emotional safe space: Migrant English as a foreign language learners in Australia. *System*, 101(July). <https://doi.org/10.1016/j.system.2021.102593>
- Elbanna, S., & Fatima, T. (2022). 'Quantifying people in the GCC region: the uses, challenges, and efficacy of the quota system policy'. *Human Resource Development International*, 00(00), 1–25. <https://doi.org/10.1080/13678868.2022.2116260>
- Fan, A., Van Hoof, H. B., Dou, X., & Serrano, A. L. (2021). 'The impact of linguistic style on customer satisfaction: a cross-cultural empirical study in Ecuador'. *International Hospitality Review*. <https://doi.org/10.1108/ihr-04-2021-0028>
- Fang, F., Zhang, L. J., & Sah, P. K. (2022). Translanguaging in Language Teaching and Learning: Current Practices and Future Directions. *RELJ Journal*, 53(2), 305–312. <https://doi.org/10.1177/00336882221114478>
- Glaser, B. G. & Strauss, A. L. (1967). *The Discovery of Grounded Theory. Strategies for Qualitative Research*. Chicago: Aldine.
- Guo, Y., Rammal, H. G., Benson, J., Zhu, Y., & Dowling, P. J. (2018). 'Interpersonal relations in China: Expatriates' perspective on the development and use of Guanxi'. *International Business Review*, 27(2), 455–464. <https://doi.org/10.1016/j.ibusrev.2017.09.012>
- Jonnalagedda, S., & Saranga, H. (2019). 'To Adapt or Design: An Emerging Market Dilemma for Automakers'. *Production and Operations Management*, 28(3), 550–569. <https://doi.org/10.1111/poms.12932>
- Lin, L. H., & Ho, Y. L. (2010). 'Guanxi and OCB: The Chinese Cases'. *Journal of Business Ethics*, 96(2), 285–298. <https://doi.org/10.1007/s10551-010-0465-6>
- Ma, J. (2020). 'Supporting practices to break Chinese international students' language barriers: The first step to facilitate their social adjustment'. *Journal of International Students*, 10(1), 84–105. <https://doi.org/10.32674/jis.v10i1.773>
- Matsumoto, A. (2019). 'Literature Review on Education Reform in the UAE'. *International Journal of Educational Reform*, 28(1), 4–23. <https://doi.org/10.1177/1056787918824188>
- Popkova, E. (2017). 'Use of methodology of "underdevelopment whirlpools" with analysis of problems and perspectives of economic growth in Asian countries'. *Journal of Entrepreneurship in Emerging Economies*, 9(1), 97–107. <https://doi.org/10.1108/JEEE-07-2016-0027>
- Rosiers, K., Van Lancker, I., & Delarue, S. (2018). Beyond the traditional scope of translanguaging: Comparing translanguaging practices in Belgian multilingual and monolingual classroom contexts. *Language and Communication*, 61(April 2017), 15–28. <https://doi.org/10.1016/j.langcom.2017.11.003>
- Sáenz- Hernández, I., Lapresta-Rey, C., Ianos, M. A., & Petreñas, C. (2020). 'Identity and linguistic acculturation expectations. The attitudes of Western Catalan high-school students towards Moroccans and Romanians'. *International Journal of Intercultural Relations*, 75, 10–22. <https://doi.org/10.1016/j.ijintrel.2019.12.001>
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2012). 'Research Methods for Business Students'. Pearson Education UK.
- Trompenaars, F., & Hampden-Turner, C. (1997). 'Riding The Waves of Culture', Second Edition. Nicholas Brealey Publishing. <https://pdfs.semanticscholar.org/baa5/8e86493834d21459cba14437d8900542d666.pdf>
- Wang, Y., Wan, G., & Gu, Y. (2023). 'Consistency and Transformation of Filial Responsibility Attitudes in China: Evidence from Panel Study of Family Dynamics of 2004 and 2017'. *Journal of Family Issues*, 44(2), 315–337. <https://doi.org/10.1177/0192513X211048475>

- Wenzel, A. (1981). 'Snowball Sampling'. *The SAGE Encyclopedia of Abnormal and Clinical Psychology*, 10(2), 141–163. <https://doi.org/10.4135/9781483365817.n1278>
- Xian, H., Atkinson, C., & Meng-Lewis, Y. (2019). 'Guanxi and high-performance work systems in China: evidence from a state-owned enterprise'. *International Journal of Human Resource Management*, 30(19), 2685–2704. <https://doi.org/10.1080/09585192.2017.1332670>
- Yao, K. (2014). 'China-Arab States Cooperation Forum in the Last Decade'. *Journal of Middle Eastern and Islamic Studies (in Asia)*, 8(4), 26–42. <https://doi.org/10.1080/19370679.2014.12023253>
- Zhang, X (2023) 'The 400,000 Chinese expatriates' community in the UAE: What makes them build lives in the UAE', *Gulf News*, May 11
- Zhang, Y., & Yin, H. (2020). 'Collaborative cheating among Chinese college students: the effects of peer influence and Individualism-Collectivism orientations'. *Assessment and Evaluation in Higher Education*, 45(1), 54–69. <https://doi.org/10.1080/02602938.2019.1608504>
- Zhong B-L, Liu T-B, Huang J-X, Fung HH, Chan SSM, Conwell Y, et al. (2016) 'Acculturative Stress of Chinese Rural-To-Urban Migrant Workers: A Qualitative Study'. *PLoS ONE* 11(6): e0157530. <https://doi.org/10.1371/journal.pone.0157530>

Leadership: Impact on the Satisfaction of Public Administration Workers in Portugal

Carlos Pinto Bessa¹, Manuel Sousa Pereira², and Silvia Faria³

¹Polytechnic Institute of Bragança, Portugal

²Polytechnic Institute of Viana do Castelo, Viana do Castelo, Portugal

³Portugalense University, Porto, Portugal

carlospintobessa@sapo.pt

msousa.manuel@gmail.com

sfaria@upt.pt

Abstract: The purpose of this work is to evaluate the role of leadership in the local public administration workers' satisfaction level. This is a study case carried out with workers from the Municipality of Penafiel. A questionnaire was made, based on the European framework model of self-assessment CAF (Common Assessment Framework). With a total of 72 questions, supported by a Likert scale, we were able to get a final sample of 407 valid answers, out of 665 employees. Data indicates the existence of a positive and statistically significant correlation between leadership and motivation, involvement, and workers' participation. It was also possible to see the impact of leadership on the workers' perception of justice, equal opportunities, rewards and career development.

Keywords: Public administration, Leadership, Job satisfaction, Motivation, Organizational involvement

1. Introduction

This work intended to analyze the impact of leadership on the satisfaction of public service employees and, consequently, whether it interferes with their provision of services and level of performance. The objective was, therefore, to understand if there is a positive and statistically significant correlation between the feeling of satisfaction with leadership and the workers' motivation, involvement and participation in the organization. For this analysis, a questionnaire was prepared, based on the European self-assessment model CAF (Common Assessment Framework), which was later applied to the Penafiel municipality's employees. Various aspects were observed, such as employee satisfaction, the perception of justice, equal opportunities, the reward system and career development/progression.

The study begins with a literature review on the topics under analysis, followed by the presentation and discussion of the results obtained. It ends with the conclusions and main limitations of the study itself.

2. Literature Review

Human Resources

Human resources are often considered one of a company's most valuable assets; in fact, they are essential today. Current business models are based on creativity, new ideas and innovation; human capital is now understood as the core and unique capability of an individual within an organization. The combination of individuals' intellect, skills, experiences, talent and artistic ability is related to the added value of products or services (Šebestová & Popescu, 2022). Human Resources (HR) assumed a growing importance due to the fact that Man has gained a new place and a new role in social and management processes (Urošević & Milijić, 2012). Job satisfaction (ST) is considered an important ingredient for organizational success. Successful organizations have satisfied workers, while job dissatisfaction can paralyze an organization (Galup, Klein & Jiang, 2008). To achieve its goals, a company has to pay maximum attention to its workers, promoting an environment that increases their satisfaction and motivation (Urošević & Milijić, 2012); satisfied, highly-motivated and loyal employees are the basis for any competitive company. A growth in satisfaction usually leads to an increase of productivity and products and services high quality (Gabcabová, 2011).

The leadership

Leadership consists on spontaneous, non-verbal demonstrations by supervisors (Madlock, 2006), being a process by which an individual influences other(s) in order to achieve a common or organizational goal (Barnett, 2011; Flight et al., 2011). The role of a leader is unique, since his competence or incompetence will potentially benefit or harm others (Ciulla, 2020). Leadership style is revealed by a set of attitudes, behaviors and management decisions, duly grounded in individual and organizational values and in the degree of confidence of those led in different situations (Mosadegh, 2003); by adopting an appropriate leadership style, the leader

will impact employees' satisfaction, commitment and productivity (Voon et al., 2011) which, in turn, impacts on the organization's performance (West et al., 2014). In other words, the role of a leader is not only about work, but about how the employee is personally related to the job (Mugira, 2022). Leadership has a significant impact on ST and workers' engagement (Mosadegh & Yarmohammadian, 2006). Satisfaction leads to quality improvements and increases the employees' participation in decision-making; dissatisfaction causes absenteeism, complaints, delays, demoralization, high job turnover, affecting the organization's overall performance (Lee, 2006; Page & Vella-Brodrick, 2008; Riketta, 2008; Scroggins, 2008; Pitts, 2009). Effective leadership and Satisfaction are two key factors for a company's success. The capable leader leads the organization as a whole to achieve defined goals.

The motivation

Motivation consists of a kind of internal energy that is stimulated in order to achieve goals related to the satisfaction of a set of individual needs (Mathe, Pavie & O'Keeffe, 2012). It is understood as a complex phenomenon that guides human behavior (Urošević and Milijić, 2012). There are many factors that affect motivation and ST, impacting on the individuals' performance, efficiency and productivity (Malik, 2010; Kamaluddin et al., (2011). Unsatisfied individual needs guides motivational behavior; as the need is met, another unsatisfied one appears, redirecting the individual's actions (Bergamini, 1991). Factors influencing the worker's motivation can be split into four categories: personal traits, job's characteristics, organization's characteristics and the wider environment (Urošević & Milijić, 2012). Managers need to understand that human beings are complex; this leads to the need to evaluate the theories of motivation and choose for techniques suited to the organization's reality and its employees' characteristics. Satisfied employees have positive attitudes at work; dissatisfied employees create unnecessary problems for the institution (Allner, 2008; Azuh, 2015; Egwenyenga, 2010; Longo, 2008).

Among several leadership styles, servant leaders and transformational leaders stand out in terms of their ability to motivate employees. Servant leaders motivate workers with persuasive and motivating language (Gutierrez-Wirsching et. al., 2015). Transformational leaders motivate them with rhetorical skills (Robbins and Judge, 2017).

Organizational involvement and participation

Some studies relate the quality of supervisory support with an increase on job satisfaction and a decrease on turnover intention. Job turnover is inversely related to organizational involvement and ST (Lambert & Hogan, 2009). Well-paid employees with meaningful and enjoyable jobs are less likely to leave the company (Kanwar, Singh & Kodwani, 2012). So, the question is: which variables are capable of influencing ST and involvement with an organization? Some authors addressed demographic variables and individual differences – eg. age or gender (Dodd-McCue & Wright, 1996); others focused on organizational variables, such as career promotion opportunities (Quarles, 1994), the relationship between employees (Major, Koziowski, Chao & Gardner, 1995) and/or the level of training given by the company (Saks, 1996).

For some authors, public sector workers have lower levels of organizational involvement than private sector workers (Obeng & Ugboro, 2003). Despite the few existing studies on organizational involvement in Portuguese public institutions, the topic has been widely studied in other countries, both on public and private institutions (Al-Qarioti & Al-Enezi, 2004; Dixon et al., 2005; Cetin, 2006). Identifying and promoting a positive organizational atmosphere seems to help increase the organization's efficiency and the well-being of its employees; in turn, has a positive impact on the achievement of objectives (Ferreira, 2017).

Perceived justice

Some studies indicate a relationship between procedural justice and employee satisfaction in different levels: remuneration, performance, selection, promotion and dismissal policies (Greenberg, 1990). Procedural justice is understood as adequate treatment given to individuals in the course of a process (Gilliland, 1993).

According to Folger (1987), the perception of procedural injustice leads to the feeling of distributive injustice: the individual considers that he could have achieved a better result if the process's management had been fairer. Disappointments associated with unfair results – eg. salary cuts, insignificant increases and/or less than the effort expended - can be overcome if they are understood as a fair, realistic and equitable process (McFarlin & Sweeney, 1992).

3. Methodology

The general objective is to evaluate the role of leadership in the satisfaction of workers in the Local Public Administration (LPA). The research model followed a quantitative approach; variables were measured using already validated constructs and the questionnaire was based in previous literature, adapting to the European framework model of self-assessment CAF - Common Assessment Framework. The pre-test was conducted in four different municipalities. Following the general objective, the following research questions were formulated:

Question 1: LPA workers' satisfaction is positively correlated with their satisfaction with Top Management;

Question 2: LPA workers' satisfaction is positively correlated with their satisfaction with Middle Managers;

Question 3: LPA workers' motivation is positively correlated with their satisfaction with Top Management;

Question 4: LPA workers' motivation is positively correlated with their satisfaction with Middle Managers;

Question 5: LPA workers' involvement and participation in the organization is positively correlated with their satisfaction with the Top Management;

Question 6: LPA workers' involvement and participation in the organization is positively correlated with their satisfaction with Middle Managers;

Question 7: LPA workers' satisfaction is positively correlated with their perception of justice practiced in the organization.

Statistical procedures

Descriptive research was carried out based on a case study. Primary data was the result of a questionnaire made available to the Municipality of Penafiel's employees, consisting of 72 questions, with a Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). All the participants were informed about the confidentiality and anonymity involved and it took them about 11 minutes to answer. It was applied between February 24 and March 2022.

407 valid observation units were collected, from 26 departments, in a universe of 665 workers. SPSS software version 23 was used for data processing. Descriptive statistic was used to describe the final sample. We performed a factor analysis, using the principal components' method, in order to reduce the number of initial variables in the satisfaction scale, identifying the common underlying factors (Pestana and Gageiro, 2005; Marôco, 2014).

Then, some inferential procedures were performed for comparison between groups and within each group, i.e., parametric and non-parametric tests (t test and Mann-Whitney test) and correlation tests (coefficient of Pearson or Spearman coefficient).

Factor analysis

For a scale with 65 items, the number of valid responses must be at least 5 times 65, that is, 325 responses. 407 valid answers allowed to apply a factor analysis to the sample (Hill & Hill, 2002).

Values of p equal to zero reveal that the Pearson coefficient correlations between the variables are high and significant. Regarding the KMO, the value obtained was 0.969, which indicates a very good correlation between the variables (Pestana & Gageiro, 2005). On the other hand, Bartlett's sphericity test has an associated p-value of 0.000, also showing that there is a correlation between the variables (Table 1).

Through the anti-image matrix, we verified that it presents all the values, below the main diagonal, close to zero and all the values of the main diagonal, superior to 0.5, suggesting that all the variables can be used for the factorial analysis. Thus, the results of these statistical procedures allow the continuation of the factorial analysis (Marôco, 2014).

Table 1: Factor analysis applicability indicators

Indicators	Scale “Worker Satisfaction”
Correlation matrix	p=0,000
KMO index	0,969
Bartlett's Sphericity Test	28094,525
	2080
	p=0,000
MAS	>0,9

Source: Own elaboration based on SPSS version 23.

In a first analysis, the 65 attributes of the “Workers' Satisfaction” scale were used, obtaining 10 factors with eigenvalues greater than 1 and with a total variance explained by these factors of 75.5%. Then, items that did not meet the criteria were eliminated and a final solution was obtained, which can be seen in Table 2 and Annex A. The final principal component analysis reveals the existence of 8 factors that explain 75.8% of the total variance, which can be considered acceptable and indicating a good summary of the set of items in the original scale.

Table 2: Factor Analysis

% of variance	15,5	13,0	12,7	9,6	8,3	5,9	5,5	5,3
% of Accumulated Variance	15,5	28,5	41,2	50,8	59,1	65,0	70,5	75,8
α of Cronbach	0,967	0,928	0,959	0,925	0,919	0,820	0,825	0,885
Nº of items	10	8	9	7	5	4	3	3

Source: Own elaboration based on SPSS version 23.

The first factor or dimension includes 10 items and explains 15.5% of the total variance, with a Cronbach's alpha coefficient of 0.967. This indicates that the internal consistency is very good. This factor was called “Satisfaction with Intermediate Level Management”.

The second factor, composed of 8 items, explains 13.0% of the total variance, with a Cronbach's alpha coefficient of 0.928. This indicates that the internal consistency is very good. This factor was named “Satisfaction with involvement and participation in the organization”.

The third factor comprises 9 items, explaining 12.7% of the total variance. Having a Cronbach's alpha coefficient of 0.959, it indicates that the internal consistency is very good. This factor was named “Satisfaction with Top Management”.

The fourth factor, formed by 7 items, explains 9.6% of the total variance, with a Cronbach's alpha coefficient of 0.925. This indicates that the internal consistency is very good. This factor was named “Satisfaction with Justice, Equal Opportunities, Rewards and Career Development”.

The fifth factor, consisting of 5 items, explains 8.3% of the total variance, having a Cronbach's alpha coefficient of 0.919. This indicates that the internal consistency is very good. This factor was named “Satisfaction with Levels of Motivation”.

The sixth factor, with 4 items, explains 5.9% of the total variance; with a Cronbach's alpha coefficient of 0.820, it indicates that the internal consistency is good. This factor was named “Support, Hygiene and Safety Services”.

The seventh factor, formed by 3 items, explains 5.5% of the total variance, having a Cronbach's alpha coefficient of 0.825, thus indicating that the internal consistency is good. This factor was named “Satisfaction with the Possibility of Reconciling Work with Family Life”.

Finally, the eighth factor, also formed by 3 items, explains 5.3% of the total variance. It has a Cronbach's alpha coefficient of 0.885, indicating that the internal consistency is good. This factor was named “Satisfaction with the Computer Equipment Available”.

4. Results and Discussion

The literature on the role of organizational variables in workers' satisfaction is very diverse, since there is a considerable number of variables that, hypothetically, can affect the worker's relationship with the organization (Hur, Woo, & Kim, 2015).

One of the most studied variables is leadership. The importance of leadership in motivating and involving workers to pursuit the organization's objectives has being widely studied and debated. It is unanimously recognized that leaders and leadership styles have a significant impact on the success of an organization and on the satisfaction and commitment of their employees. Some researchers have analyzed the relationship between leadership and ST and concluded that leadership has a significant impact on workers' satisfaction and organizational engagement (Mosadegh & Yarmohammadian, 2006).

Leadership and employee satisfaction

Leadership is a process by which an individual influences other for the purpose of achieving a common or organizational goal. According to Voon et al. (2011), organizational success depends on internal organization and leadership styles. By adopting the appropriate leadership style, the leader affects workers' satisfaction, commitment, and productivity. Effective leadership and workers' satisfaction are two factors considered fundamental to any organization's success. Leading involves managing people, guiding them in all their social interactions so that they focus on fulfilling the organization's objectives (Skansi, 2000; Ciula, 2020; Mugira, 2022). Different leadership styles lead to different work environments and directly affect workers' satisfaction (Bogler, 2002; Timothy & Ronald, 2004).

Managers should bet in improving workers' satisfaction through employee-oriented leadership, creating favorable working conditions and assigning challenging and stimulating tasks (Voon et al, 2011).

Research Question 1: workers' motivation is positively correlated with their satisfaction with Middle Managers: to test the different services, the first factor "Satisfaction with Middle Managers" was compared with the fifth factor "Satisfaction with levels of motivation", in the different services of the municipality (Table 3). The results of this comparison revealed that the existing correlation between the variables is positive and significant in all services, except for the Municipal Museum and the Joaquim Araújo School Group; satisfaction with Middle Managers is positively correlated with levels of motivation; the greater the satisfaction with Middle Managers, the greater the workers' motivation levels. These results confirm the validity of question 1, according to which, workers' motivation is positively correlated with their satisfaction with Intermediate Level Managers.

Table 3: Workers' Motivation and Satisfaction with Middle Managers.

Service		N	Average	Correlation coefficient	Correlation Test
Municipal museum	Intermediate Chiefs	12	3,4	0,449	0,143
	level of motivation	12	3,7		
Municipal library	Intermediate Chiefs	12	3,6	0,582	0,047*
	level of motivation	12	3,9		
Social action	Intermediate Chiefs	9	3,3	0,706	0,033*
	level of motivation	9	3,6		
Sport Management	Intermediate Chiefs	14	3,9	0,857	0,000**
	level of motivation	14	3,9		
Financial management	Intermediate Chiefs	9	3,6	0,773	0,015*
	level of motivation	9	3,4		
Direction of Urbanism	Intermediate Chiefs	30	3,4	0,529	0,003**
	level of motivation	30	3,6		
Cabeça Santa School Group	Intermediate Chiefs	61	4,0	0,624	0,000**
	level of motivation	61	3,9		
Pinheiro School Group	Intermediate Chiefs	63	3,8	0,573	0,000**

Service		N	Average	Correlation coefficient	Correlation Test
	level of motivation	63	4,0		
Ferreira Gomes School Group	Intermediate Chiefs	32	4,5	0,501	0,003**
	level of motivation	32	4,5		
Joaquim Araújo School Group	Intermediate Chiefs	29	3,9	0,300	0,114
	level of motivation	29	4,1		
Paço Sousa School Group	Intermediate Chiefs	24	4,2	0,836	0,000**
	level of motivation	24	4,3		
* Significant at 5%; ** significant at 1%.					

Source: Own elaboration based on SPSS version 23.

Regarding question 2: workers' motivation is positively correlated with their satisfaction with Top Management, it was decided to compare, in different services, the third factor "Satisfaction with Top Management" with the fifth factor "Satisfaction with levels of motivation" (Table 4). The results of this comparison show that the existing correlation between the variables is positive and significant in all services, except for the Municipal Museum, General Directorate of Urbanism and Joaquim Araújo School Grouping; Satisfaction with Top Management is positively correlated with workers' levels of motivation. The greater the satisfaction with Top Management, the greater the workers' motivation levels.

These results indicate the validity of question 2: workers' motivation is positively correlated with satisfaction with their Top Management.

Table 4: Workers' Motivation and Satisfaction with Top Management

Service		N	Average	Correlation coefficient	Correlation Test
Municipal museum	Top Management	12	3,6	0,046	0,886
	level of motivation	12	3,7		
Municipal library	Top Management	12	3,7	0,686	0,014*
	level of motivation	12	3,9		
Social action	Top Management	9	3,8	0,809	0,008*
	level of motivation	9	3,6		
Sport Management	Top Management	14	3,7	0,912	0,000**
	level of motivation	14	3,9		
Financial management	Top Management	9	3,2	0,822	0,007*
	level of motivation	9	3,4		
Direction of Urbanism	Top Management	30	3,5	0,235	0,210
	level of motivation	30	3,6		
Cabeça Santa School Group	Top Management	61	4,0	0,420	0,001**
	level of motivation	61	3,9		
Pinheiro School Group	Top Management	63	3,9	0,600	0,000**
	level of motivation	63	4,0		
Ferreira Gomes School Group	Top Management	32	4,6	0,361	0,042*
	level of motivation	32	4,5		
Joaquim Araújo School Group	Top Management	29	3,9	0,242	0,206
	level of motivation	29	4,1		

Service		N	Average	Correlation coefficient	Correlation Test
Paço Sousa School Group	Top Management	24	4,1	0,706	0,000**
	level of motivation	24	4,3		
* Significant at 5%; ** significant at 1%.					

Source: Own elaboration based on SPSS version 23.

Research question 3: the involvement and participation of workers in the organization is positively correlated with their satisfaction with Middle Managers. In the different services, the first factor “Satisfaction with Middle Managers” was compared with the second factor “Satisfaction with involvement and participation in the organization” (Table 5). The results indicate that the existing correlation between the variables is positive and significant in all services, except for the Municipal Library; satisfaction with Middle Managers is positively correlated with levels of involvement and participation in the organization. The greater the satisfaction with Middle Managers, the greater the levels of involvement and participation in the organization.

These results confirm the validity of question 3, according to which, workers' satisfaction with Middle Managers is positively correlated with their level of involvement and participation in the organization.

Table 5: Involvement and Participation and Satisfaction with Middle Managers

Service		N	Average	Correlation coefficient	Correlation Test
Municipal museum	Intermediate Chiefs	12	3,4	0,646	0,023*
	Involvement and participation	12	3,7		
Municipal library	Intermediate Chiefs	12	3,6	0,454	0,138
	Involvement and participation	12	3,4		
Social action	Intermediate Chiefs	9	3,9	0,714	0,031*
	Involvement and participation	9	3,8		
Sport Management	Intermediate Chiefs	14	3,9	0,709	0,005**
	Involvement and participation	14	3,8		
Financial management	Intermediate Chiefs	9	3,6	0,795	0,010**
	Involvement and participation	9	3,3		
Direction of Urbanism	Intermediate Chiefs	30	3,4	0,530	0,003**
	Involvement and participation	30	3,5		
Cabeça Santa School Group	Intermediate Chiefs	61	4,0	0,629	0,000**
	Involvement and participation	61	4,0		
Pinheiro School Group	Intermediate Chiefs	63	3,8	0,502	0,000**
	Involvement and participation	63	3,8		
Ferreira Gomes School Group	Intermediate Chiefs	32	4,5	0,721	0,000**
	Involvement and participation	32	4,5		
Joaquim Araújo School Group	Intermediate Chiefs	29	3,9	0,740	0,000**
	Involvement and participation	29	3,9		
Paço Sousa School Group	Intermediate Chiefs	24	4,2	0,753	0,000**
	Involvement and participation	24	4,0		
* Significant at 5%; ** significant at 1%.					

Source: Own elaboration based on SPSS version 23.

Research question 4: the involvement and participation of workers in the organization is positively correlated with their satisfaction with the Top Management. To compare the different services, the third factor "Satisfaction with Top Management" was compared with the fifth factor "Satisfaction with involvement and participation in the organization" (Table 6). The results of this comparison indicate that the existing correlation between the variables is positive and significant in all services, except for the Municipal Museum and Financial Management; Satisfaction with Top Management is positively correlated with levels of involvement and participation in the organization. The greater the satisfaction with Top Management, the greater the levels of involvement and workers' participation in the organization. These results confirm the validity of question 4, according to which, the satisfaction levels of workers with Top Management are positively correlated with their levels of involvement and participation in the organization.

Table 6: Involvement and Participation and Satisfaction with Top Management

Service		N	Average	Correlation coefficient	Correlation Test
Municipal museum	Top Management	12	3,6	0,459	0,133
	Involvement and participation	12	3,7		
Municipal library	Top Management	12	3,7	0,767	0,004**
	Involvement and participation	12	3,4		
Social action	Top Management	9	3,8	0,798	0,010**
	Involvement and participation	9	3,8		
Sport Management	Top Management	14	3,7	0,678	0,008**
	Involvement and participation	14	3,8		
Financial management	Top Management	9	3,2	0,418	0,263
	Involvement and participation	9	3,3		
Direction of Urbanism	Top Management	30	3,5	0,431	0,018*
	Involvement and participation	30	3,5		
Cabeça Santa School Group	Top Management	61	4,0	0,651	0,000**
	Involvement and participation	61	4,0		
Pinheiro School Group	Top Management	63	3,9	0,473	0,000**
	Involvement and participation	63	3,8		
Ferreira Gomes School Group	Top Management	32	4,6	0,573	0,001**
	Involvement and participation	32	4,5		
Joaquim Araújo School Group	Top Management	29	3,9	0,708	0,000**
	Involvement and participation	29	3,9		
Paço Sousa School Group	Top Management	24	4,1	0,632	0,001**
	Involvement and participation	24	4,0		
* Significant at 5%; ** significant at 1%.					

Source: Own elaboration based on SPSS version 23.

Research question 5: workers' satisfaction is positively correlated with their perception of justice practiced in the organization. We chose to compare, in different services, the levels of "Global Satisfaction" of workers with the fourth factor of the scale, "Satisfaction with justice, equal opportunities and rewards" (Table 7). From this comparison, data show that there is a positive and significant correlation between the variables in all services, except in Financial Management; satisfaction with equal opportunities is positively correlated with overall satisfaction and the greater the satisfaction with equal opportunities, the greater their overall satisfaction. Therefore, hypothesis 7 is confirmed (workers' satisfaction is positively correlated with their perception of organizational justice and equity).

Table 7: Satisfaction with Justice, equal opportunities and rewards and the Global Satisfaction of workers

Service		N	Average	Correlation coefficient	Correlation Test
Municipal museum	Justice and Equality	12	3,1	0,835	0,001**
	Global Satisfaction	12	3,5		
Municipal library	Justice and Equality	12	3,4	0,870	0,000**
	Global Satisfaction	12	3,6		
Social action	Justice and Equality	9	3,3	0,865	0,003**
	Global Satisfaction	9	3,6		
Sport Management	Justice and Equality	14	3,5	0,778	0,001**
	Global Satisfaction	14	3,7		
Financial management	Justice and Equality	9	3,0	0,594	0,092
	Global Satisfaction	9	3,4		
Direction of Urbanism	Justice and Equality	30	2,9	0,805	0,000**
	Global Satisfaction	30	3,4		
Cabeça Santa School Group	Justice and Equality	61	3,5	0,842	0,000**
	Global Satisfaction	61	3,9		
Pinheiro School Group	Justice and Equality	63	3,5	0,825	0,000**
	Global Satisfaction	63	3,8		
Ferreira Gomes School Group	Justice and Equality	32	4,2	0,734	0,000**
	Global Satisfaction	32	4,4		
Joaquim Araújo School Group	Justice and Equality	29	3,8	0,894	0,000**
	Global Satisfaction	29	3,9		
Paço Sousa School Group	Justice and Equality	24	3,7	0,697	0,000**
	Global Satisfaction	24	4,1		
** significant at 1%.					

Source: Own elaboration based on SPSS version 23.

5. Conclusions

The aim of this study was to assess the impact of leaders and their actions on the local Portuguese Public Administration workers' satisfaction. A study was developed with a sample of civil service workers from the council of Penafiel. A questionnaire was made based on the European self-assessment model - CAF. Data obtained allow us to state that the way in which workers perceive the justice practiced in the organization and/or in the service in which they are integrated is positively correlated with their overall satisfaction. That is, the greater their perception of equal treatment, opportunities, distribution of income and rewards - fair management -, the greater the workers' satisfaction.

With regard to workers' satisfaction with top and middle managers, the results indicate that there is a significant positive correlation between levels of motivation, involvement and participation in the organization and levels of satisfaction with managers; the higher the levels of workers' satisfaction with their managers, the higher their levels of motivation, involvement and participation in the organization. These conclusions are in line with the existent literature. However, since this study was done only in one Portuguese municipality, we have a considerable limitation and, consequently, evident difficulties in extrapolating the results. As future studies, we intend to replicate the research in other Portuguese municipalities, so that we can conclude about Portugal as a whole.

References

- Allner, I. (2008). Managerial leadership in academic libraries: roadblock to success. *Library Administration & Management*, 22(2), 69-78. DOI:10.5860/llm.v22i2.1717.
- Al-Qarioti, M., & Al-Enezi, A. (2004). Organizational Commitment of Managers in Jordan: A Field Study. *International Journal of Public Administration*, 27(5).
- Azuh, K. (2015). Good leadership, genuine followership. The Pointer, Wednesday, December 9, p.21.
- Barnett, T. (2011). Leadership Theories and Studies, Reference for Business. Encyclopedia of Business.
- Bergamini, C. (1991). *Motivação*. São Paulo: Atlas SA.
- Bogler, R. (2002). Two profiles of schoolteachers: A discriminate analysis of job satisfaction. *Teaching and Teacher Education*, 18(6), 665-673.
- Cetin, M. (2006). The relationship between job Satisfaction, Occupational and Organizational Commitment of Academics. *The Journal of American Academy of Business*, 8(1), 78-88. China. Retrieved from ieeexplore.ieee.org/./046798557.
- Ciulla, J.B. (2020). Ethics and Effectiveness: The Nature of Good Leadership. In: *The Search for Ethics in Leadership, Business, and Beyond. Issues in Business Ethics*, vol 50. Springer, Cham. https://doi.org/10.1007/978-3-030-38463-0_1
- Dixon, M., Cunningham, G., Sagas, M., Turner, B., & Kent, A. (2005). Challenge is Key: An Investigation of Affective Organizational Commitment in Undergraduate Interns. *Journal of Education for Business*, 80(3), 172-180.
- Dodd-McCue, C., & Wrieth, G. (1996). Men, Women, and Attitudinal Commitment: The Effects of Workplace Experiences and Socialization. *Human Relations*, 49: 1065-91.
- Egwunyenga, E. J. (2010). *Essentials of school administration*. Benin City: Justice – JecoPublishers.
- Ferreira, P. (2017). Organizational climate and quality of life at work. Org. Andrea Ramal. Reprint Rio de Janeiro: LTC, 2017.
- Flight, R.L., D'Souza, G. and Allaway, A.W. (2011). Characteristics-based innovation adoption: scale and model validation, *Journal of Product & Brand Management*, Vol. 20 No. 5, pp. 343-355. <https://doi.org/10.1108/10610421111157874>.
- Folger, R. (1987). Distributive and procedural justice in the workplace. *Social Justice Research*, 1(2), 143-159.
- Gabčanová, A. (2011). The employees—the most important asset in the organizations. *Human Resources Management & Ergonomics*, 5(1), 30-33.
- Galup, S., Klein, G., & Jiang, J. (2008). The impact of job characteristics on is employee satisfaction: A comparison between permanent and temporary employees. *Journal of Computer Information Systems*, 48(4), 58-68.
- Gilliland, S. W. (1993). The Perceived Fairness of Selection Systems: An Organizational Justice Perspective. *Academy of Management Review*, 18 (4), 694-734.
- Greenberg, J. (1990). Organizational Justice: Yesterday, Today, and Tomorrow. *Journal of Management*, 16 (2), 399-432.
- Gutierrez-Wirsching, S., Mayfield, J., Mayfield, M., & Wang, W. (2015). Motivating language as a mediator between servant leadership and employee outcomes. *Management Research Review*, 13, 104-115. ISSN: 2040-8269.
- Hill, M. M., & Hill, A. B. (2002). *Investigação por Questionário*. Lisboa: Edições Silabo. 2ª Edição.
- Hur, W.-M., Woo, J., & Kim, Y. (2015). The Role of Consumer Values and Socio-Demographics In Green Product Satisfaction: The Case of Hybrid Cars. *Psychological Reports: Employment Psychology & Marketing*, 117(2): 406-427.
- Kamaluddin, N., Hassan, Z., Abdul Wahab, R., & Mohd Hussien, R. (2011). *Principles of Management*. Shah Alam, Selangor: Oxford University Press.
- Kanwar, Y., Singh, A., & Kodwani, A. (2012). Kanwar y.p.S., Singh A.K., & Kodwani A. D. (2012) A Study of job Satisfaction, Organizational Commitment and Turnover Intent among the IT and ITES Sector Employees. *Vision*, 16(1), 27-35.
- Lambert, E., & Hogan, N. (2009). The Importance of job Satisfaction and Organizational Commitment in Shaping Turnover Intent: A Test of a Causal Model. *Criminal Justice Review*, 34(1), 96-118.
- Lee, D. R. (2006). Who Says Money Cannot Buy Happiness? *The Independent Review*, 10(3), 85-400.
- Likert, R. (1961). *New patterns of management*. New York, NY, US: McGraw-Hill.
- Long, L. (2008). Impact of leadership styles on organizational change. An empirical study in
- Long, L. (2008). Impact of leadership styles on organizational change. An empirical study in China. Retrieved from ieeexplore.ieee.org/./046798557.
- Madlock, P. (2006). Supervisors' nonverbal immediacy behaviours and their relationship to subordinates' communication satisfaction, job satisfaction, and willingness to collaborate. *Paper presented at the National Communication Association Convention*, San Antonio, TX., November.
- Major, D., Koziowski, S., Chao, G., & Gardner, P. (1995). A Longitudinal Investigation of Newcomer Expectations, Early Socialization Outcomes, and the Moderating Effects of Role Development Factors. *Journal of Applied Psychology*, 80: 418-31.
- Malik, N. (2010). A study on motivational factors of the faculty members at University of Balochistan. *Serbian Journal of Management*, 5(1), 143-149.
- Mathe, H., Pavie, X., & O'Keeffe, M. (2012). *Valuing People To Create Value: An Innovative Approach to Leveraging Motivation at Work*. Singapore: World Scientific Publishing Co. Pte. Ltd., Books.
- McFarlin, D., & Sweeney, P. (1992). Distributive and Procedural Justice as Predictors of Satisfaction with Personal and Organizational Outcomes. *Academy of Management Journal*, 35 (3), 626-637.
- Mosadegh, A. (2003). The role of participative management (suggestion system) in hospital effectiveness and efficiency. *Research in Medical Science*, 8(3), 85-89.
- Mosadegh, A., & Yarmohammadian, M. (2006). A study of relationship between managers' leadership style and employees' job satisfaction. *Leadership in Health Services*, Vol. 19, No. 2, pp. 11-28.

- Mugira, A. (2022). Leadership Perspective Employee Satisfaction Analysis. *AKADEMIK: Jurnal Mahasiswa Humanis*. 2 (3), 127-135. e-ISSN 2774-8863
- Obeng, K., & Ugboro, I. (2003). Organizational Commitment among public Transit Employees: Na Assessment Study. *Transportation Quarterly*, 57, pp. 83-98. *Transportation Quarterly*, 57, pp. 83-98.
- Page, K., & Vella-Brodrick, D. (2008). The what, why and how of employee wellbeing: A new model. *Springer Science and Business Media, Business Media*, Vol. 90, pp. 441-448.
- Pestana, M., & GaGeiro, J. (2005). *Análise de Dados para Ciências Sociais: A Complementaridade do SPSS*. Lisboa, Edições Sílabo. Lisboa: Edições Sílabo.
- Pitts, D. (2009). Diversity management, job satisfaction, and performance: evidence from US Federal Agencies. *Public Administration Review*, 69(2), 328-38.
- Quarles, R. (1994). An Examination of Promotion Opportunities and Evaluation Criteria as Mechanisms for Affecting Internal Auditor Commitment, Job Satisfaction and Turnover Intentions. *Journal of Managerial Issues*, 6: 176-94.
- Riketta, M. (2008). The causal relation between job attitudes and performance: A meta- analysis of panel studies. *Journal of Applied Psychology*, 93(2), 472-481.
- Robbins, S. P. & Judge, T. A. (2017). *Organizational Behavior* (17th Ed., Global Edition), Pearson Education Limited.
- Rutherford, B., Boles, J., Hamwi, G., Madupalli, R., & Rutherford, L. (2009). The role of the seven dimensions of job satisfaction in salesperson's attitudes and behaviours. *Journal of Business Research*, 62 (11), 1146-1151.
- Saks, A. (1996). The Relationship between the Amount and Helpfulness of Entry Training and Work Outcomes. *Human Relations*, 49: 429-51.
- Scroggins, W. (2008). The relationship between employee fit perceptions, job performance, and retention: Implications of perceived fit. *Employee Responsibilities & Rights Journal*, 20(1), 57-71.
- Šebestová, J. D., & Popescu, C. R. (2022). Factors Influencing Investments into Human Resources to Support Company Performance. *Journal of Risk and Financial Management*, 15(1), 19. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/jrfm15010019>.
- Skansi, D. (2000). Relations of managerial efficiency and leadership styles - empirical study. *Hrvatska elektroprivreda, Management*, 5(2), 51-67.
- Timothy, A., & Ronald, F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89(5), 755-768.
- Urošević, S., & Milijić, N. (2012). Influence of Demographic Factors on Employee Satisfaction and Motivation. *Journal of Management, Informatics and Human Resources*, 45 (4), P 174-182.
- Voon, M., Lo, M., Ngui, K., & Ayob, N. (2011). The influence of leadership styles on employees' job satisfaction in public sector organizations in Malaysia.
- West, M., Lyubovnikova, J., Eckert, R., & Denis, J. L. (2014). Collective leadership for cultures of high-quality health care. *Journal of Organizational Effectiveness*, 1(3), 240-260. <https://doi.org/10.1108/JOEPP-07-2014-0039/FULL/XM>.

Understanding the Motivation of Young Adults to Enlist and Pursue Military Leadership Studies to Become Professional Soldiers

Kristýna Binková and Eva Štěpánková

University of Defence, Brno, Czech Republic

kristyna.binkova@unob.cz

eva.stepankova@unob.cz

Abstract: Since the beginning of 2005, conscription service in the Czech Republic ended, leading to the full professionalization of the Czech Armed Forces. Consequently, a career soldier system has been established. The purpose of this article is to identify the factors that motivated young adults, reflecting the specifics of the military profession, to join the army, as well as the factors that motivated them to apply to the Faculty of Military Leadership at the University of Defence for military studies. Data was collected through a semi-structured questionnaire completed by 179 respondents who were first-year military students at the University of Defence. This institution is the only military higher education establishment within the Czech Armed Forces, offering students comprehensive knowledge in the field of command and control. The questionnaire included both open-ended and closed-ended questions. In addition to their motivations, respondents also provided insights on how the Russia-Ukraine conflict influenced their decision to enlist in the army, as well as who supported or discouraged them from doing so. The results indicate that career growth, adventurous activities, job security, physical readiness, fieldwork, and interpersonal relations were among the most influential factors for the respondents. The majority of respondents agreed that the current security situation in the world supported their decision to become a soldier and strengthened their desire to defend their homeland. Parents, extended family, partners, and friends were the primary sources of support in their decision-making process. Just like any other employer, volunteer forces are seeking their own positions and competitive advantages in the labor market. Therefore, it is important for the defense sector to understand the motivations of future commanders to join and remain in the armed forces.

Keywords: Soldier, Army, Military, Leadership, Motivation, Russia-Ukraine conflict

1. Introduction

Enlisting in the military is a significant decision made by young people. Understanding the factors influencing young adults' decisions about professional military career is essential for educational institutions, policymakers and society as a whole. The objective of this study is to investigate the motivations and influences behind these young adults' decision to pursue education at a military university and embark on a career as professional soldiers.

The aim of the research is to find out how significantly selected factors reflecting the specifics of the military profession motivate young adults to join the Czech Armed Forces (CAF) and apply to the Faculty of Military Leadership of The University of Defence (FML UoD).

The research questions of the paper can be formulated as follows:

- What are the factors that motivated first year military students of the Faculty of Military Leadership of UoD to join CAF?
- What are the factors that motivated them to apply to military university?
- What are the factors that were discouraging from joining CAF?
- How did their close ones influence them during their decision-making?
- How did the current Russia-Ukraine conflict influence their decision-making?

From the beginning of 2005, the conscription service in the Czech Republic ended and led to the full professionalization of the CAF and career soldier system (Pernica, 2007). Currently, Czech Armed Forces consist of 27 000 soldiers. The University of Defence is the only military higher education establishment within the CAF, offering knowledge in the military field of command and control. 1400 students are currently studying there. In order to be accepted to study at UoD, one must reach the age of 18 and provide proof of a clean record. The applicant must successfully complete an entrance examination, undergo a medical examination and complete two-months initial military training. After successful admission, all students undertake a general introduction together. In the 3rd year, they are divided into 12 specializations (e.g. commander of mechanised units, reconnaissance units, logistics, financial and human resources etc.). After graduation, students are assigned to the troops according to their preferences and the current needs of the CAF. Studying and a pursuing military career involve certain risks and limitations such as the risk of injury, limited possibilities to engage in business or to be politically active etc. (according to Zákon o vojácích z povolání, 1999). However,

military career offers valuable benefits including job security, retirement and other allowances, the support of improving physical condition etc. The soldier may, at their own discretion or upon orders from the CAF, participate in a military operation abroad.

2. Theoretical Background

Motivation is related to management and leadership. Management focuses on working with all organisation resources (finance, information, people, material), while leadership focuses mainly on people (Armstrong and Stephens, 2008). Thus, transformational leadership in particular is strongly linked to motivation, but the relation between them can be perceived differently by individual authors. Adair (2009) states that leadership and motivation are "like brother and sister". It is difficult to think of a leader who does not motivate others. Maddock and Fulton (1998) are even convinced that leadership is motivation. Other authors perceive motivation as one of the components of leadership (Armstrong and Stephens, 2008; Shelton, 2012; Bass and Riggio, 2012). According to Blanchard and Conley (2022) the leadership focuses on vision, direction and results - all these aspects can only be achieved through the motivation of workers.

Motivation can be defined in different ways and refers to the forces either within or external to a person that arouse enthusiasm and persistence to pursue a certain course of action (Daft et al., 2010). The motivational tools can be categorized, e.g. to job evaluation, social conditions, material conditions and job characteristics (Blažek, 2011).

A person's decision to join the military is complex and motivated by a number of intrinsic and extrinsic factors (Ginexi et al., 1994). Several key factors have been identified as motivations and influences for young adults choosing to study at military academies and universities - financial incentives, sense of purpose and service, career aspirations and opportunities, personal development, peer and family influence. Some studies show that young people join the military for material reasons. Economic factors, such as financial stability (e.g. monetary rewards, salary and benefits) and job security, have been identified as motivations for example by Moskos (1982) and Griffith (2008). For young individuals who may face limited employment prospects or financial constraints, military service can provide a stable income. Moreover, financial factors (scholarships, tuition fees etc.) offered by military schools can make these institutions more attractive to students seeking financial support for their education (Barr, 2016 and 2019).

Research however indicates that not only material factors but also value-oriented reasons such as personal, social, and patriotic motivations drive young people to enlist in the military (Eighmey, 2006). Lawrence & Legree (1996), Eighmey (2006) or Griffith (2008) found that soldiers often possess a strong sense of duty and commitment to serve their country. They perceive military service as an opportunity to make a meaningful contribution and demonstrate their loyalty to their country. Park & Avery (2016) and Lewis (2018) found that young people who have a strong sense of patriotism are more likely to choose military service. They perceive it as a way to defend the values of their country and protect their fellow citizens. Similar findings were confirmed by Woodruff et al. (2006) - intrinsic values such as patriotism and desire to serve play a key role in the decision-making process to join the armed forces. For 52 American and 11 Bulgarian servicemen, the most important factors were participation in military operations and an opportunity to serve their country (Grigorov, 2020). Similarly, a strong sense of purpose and desire to serve their country or community motivates young adults to military studies.

Career considerations also play a significant role. Ginexi et al. (1994), Grigorov (2020), Woodruff et al. (2006), or Gade & Elig (1986) emphasize that military service offers structured career paths, job security, and opportunities for skill development. The military provides training and education that can lead to valuable civilian career prospects. It makes an attractive option for young individuals seeking stability and long-term prospects. Some are drawn to military academies due to the emphasis on personal development, self-discipline, independence and leadership skills.

The influence of peers and family members plays a crucial role in young adults' educational and career choices. Gibson et al. (2007), Griffith (2008 and 2011) or Kleykamp (2006) found that family members who have served in the military can positively influence young individuals' perception of military service. Their family's experiences and values may instill a sense of duty and tradition.

Other motivators can be the desire for adventure and the challenge of pushing personal limits. Physically and mentally demanding activities, as well as the opportunity to travel and new experience can be attractive factors (Lerro et al., 1993). Helmus et al. (2018) explore also the role of social identity in military service –

establishing a sense of belonging and identity within the military community that is a platform to develop camaraderie, teamwork, and shared sense of purpose.

3. Data and Methods

With regard to the aim, the research was set in a quantitative paradigm. The self-constructed questionnaire survey appears to be the most effective data collection technique for this purpose. Data collection was carried out in October 2022 through the printed questionnaire. The target population consisted of the first-year military students of the Faculty of Military Leadership of UoD. The validity of the questionnaire was verified in a pre-survey conducted among selected military students during June 2022. The purpose and aim of the research including full assurance of anonymity, were explained to all the research participants prior to data collection.

The respondents were motivated to complete the questionnaire by the personal presence of the researchers, they could ask for additional information if necessary. It ensured a return rate of 100%. The results are thus representative of the population (the first-year military students of FML UoD). 179 respondents took part in the research - 21 % women and 79 % men. 97 % of the respondents were 19 - 22 years old, 3 % of them were older. 93% of the respondents had never been a member of the CAF before, 7% were graduates of Military High School.

To answer the first and second research question, 32-item and 13-item closed-ended battery of motivational factors with responses on the Likert scale was created. The 32 factors were divided into three groups – work evaluation (salary, benefits and moral evaluation), work characteristics and other motivators. Respondents were allowed to add their answers through open-ended questions. To answer the third research question, 10-item closed-ended battery of demotivational factors was created. The possibilities of answers were - insignificant, rather insignificant, rather significant and very significant. To answer the fourth research question, one closed and one open question were created. To answer the fifth research question, one open question was created. The set of factors was created based on content analysis of resources related to motivation both in general and in military environment. Furthermore, the results of brainstorming session with five soldiers and 35 UoD students were used as well as the results of the "Motivation to join the CAF" study of The General Staff of the CAF, which interviewed 2 229 recruits in 2018.

Quantitative data was statistically analysed. Qualitative data was analyzed through open coding according to grounded theory which enables structuring of a large amount of data and organizing them into categories according to their similarities.

4. Results

The first research question aims at finding a level of significance of 32 motivational factors - divided into three groups - for joining the CAF. The results are shown in Figures 1, 2 and 3.

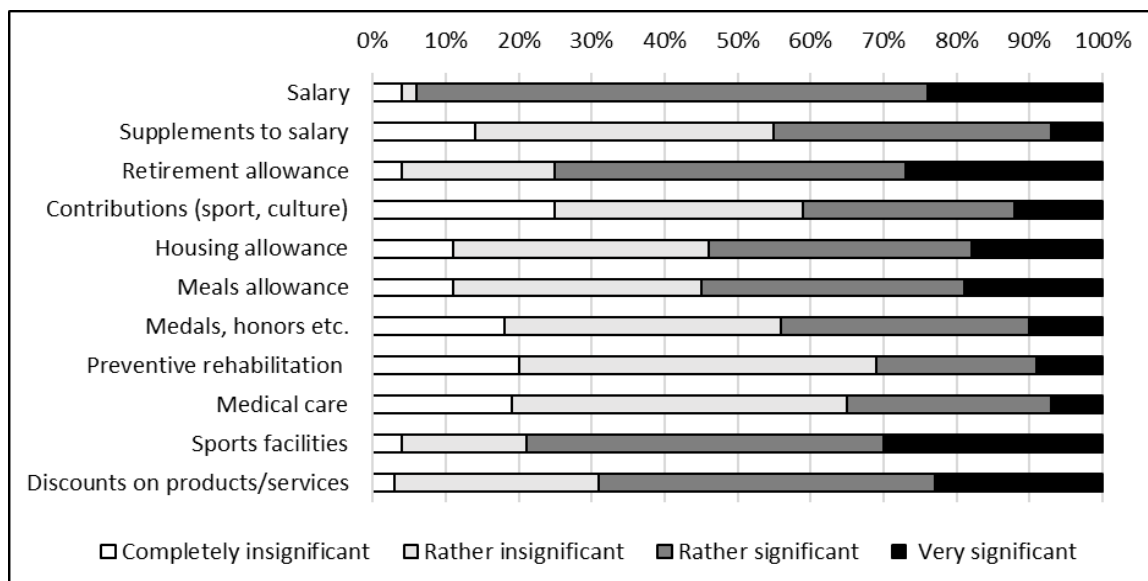


Figure 1: Significance of motivational factors for joining CAF – work evaluation

Among the job appreciation tools, salary, retirement allowance, sports facilities and possible discounts on products/services, are the most important motivators. Salary is significant for more than 90% of candidates. Less important aspects are allowances (for recreation, culture, sports etc.), preventive rehabilitation and organisational medical care. Even so, these benefits are important for 30-40% of the respondents.

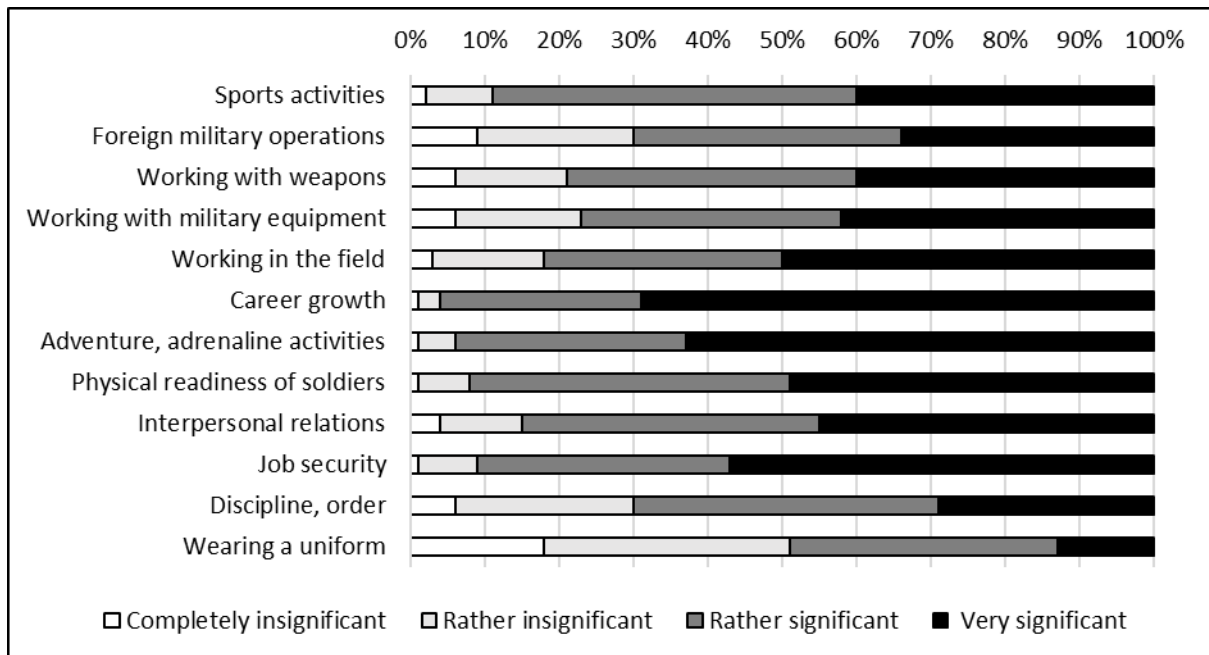


Figure 2: Significance of motivational factors for joining CAF – work characteristics

Motivation aspects connected with work characteristics are definitely the most important group of criteria in the decision-making process about military career. All aspects (with the exception of wearing the uniform) are important for at least 70% of applicants. Career growth, adventure and sports activities, physical readiness and job security are meaningful even for 90% of them. Moreover, the frequency of "very significant" responses is significantly higher compared to the job appreciation instruments.

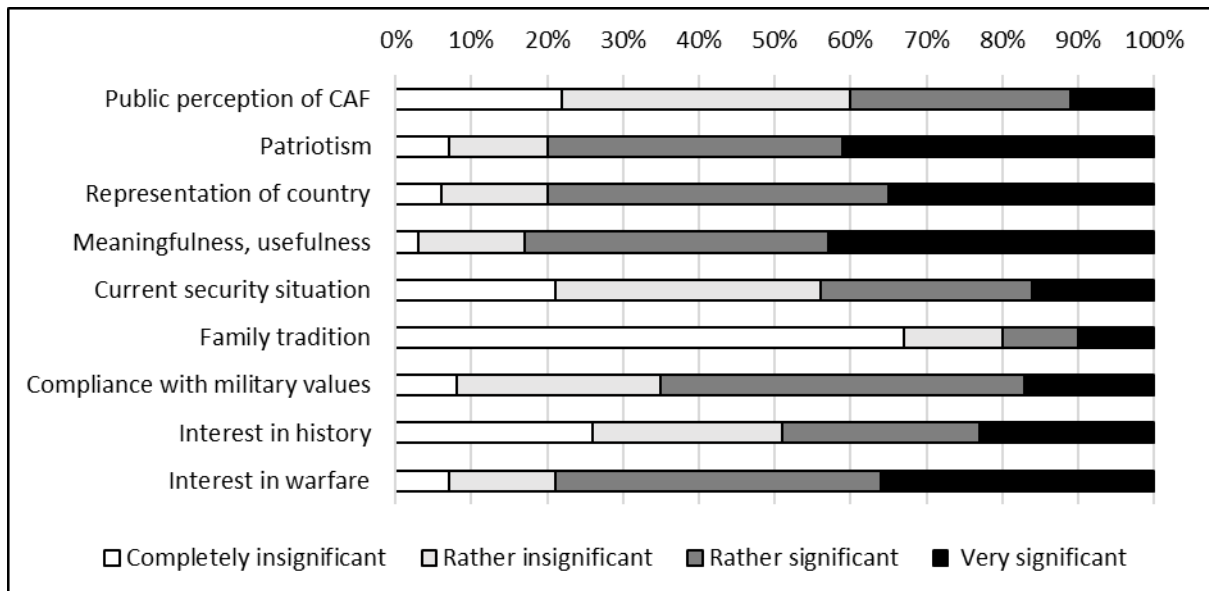


Figure 3: Significance of motivational factors for joining CAF – other motivators

Other factors are usually connected with soft characteristics such as the values and interests of the candidates, their relationship with the public and to their homeland. These motivators are also considered to be significant by a large part of respondents, especially those related to patriotism, meaningfulness and interest in the military and military values.

Open-ended questions revealed some additional factors or explained the above ones. As part of the process of open coding of the text according to the grounded theory, the diverse formulations of the responses were arranged according to similarity into the following categories:

- Altruistic motivations – 11 respondents declare they are motivated by the opportunity to help their own family or nation ("To become a more beneficial person for others, to help others and at the same time to be braver and able to defend myself and my family if necessary").
- Self-development - 10 students emphasize aspects related to personal growth, self-development and the desire to try something new ("I want to do what I enjoy and I want to be the best at it", "I want to do what not everyone can do", "I want to get to know myself in difficult situations").
- Pride, admiration for the army - 7 respondents mention aspects related to the pride for being a soldier and the effort to be a role model for others ("I want to show the world that even a small country can be strong", "I want to be a part of army culture").
- Job security - seven respondents highlighted job security in the armed forces as a motivating aspect.
- Motivation by loved ones - four respondents state that ("...positive experiences and stories from friends", "I wanted to follow in my father's footsteps").
- Long-term interest in military values (warfare) - six students state they have also been involved in activities close to the military ("it is connected with my high school", "I go to military-themed airsoft camps"). Some of them mention that becoming a soldier is their "childhood dream".
- Independence - in two cases, the possibility of becoming independent from family or living with a partner emerged as a motivating factor.

It was followed up on the motivational factors influencing entry into the CAF by examining the significance of factors that influenced the decision to study at the military school in CR - the University of Defence. The results are presented in Figure 4.

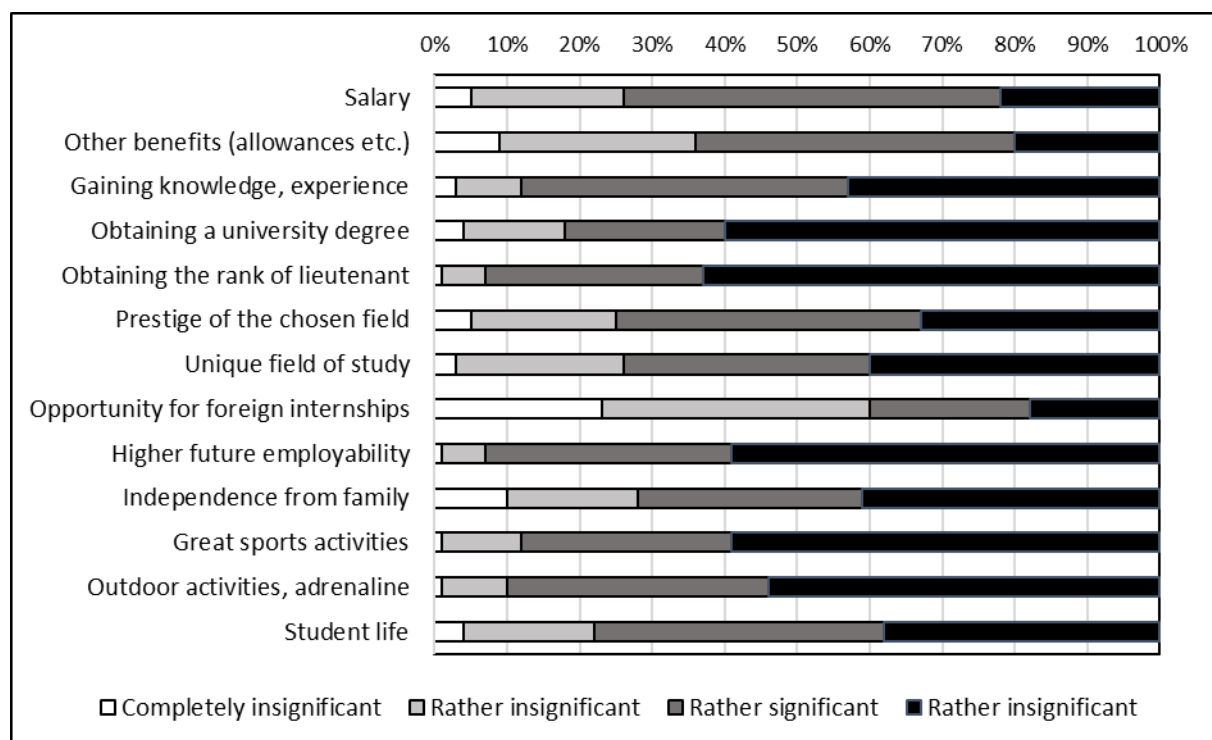


Figure 4: Significance of motivational factors for applying to military university

The most important reasons for the decision to attend a military university are to obtain of the rank of lieutenant and related higher employment in the CAF (both important for 90% of respondents). Additionally, students are attracted by the possibility of enjoying sports while studying, attaining the university degree, gaining high knowledge and experience, student life and salary (rather or significantly important for more than 70% respondents).

In open-ended question, security, pride in the military profession and self-development are largely declared ("proving to myself that I have what it takes", "...gaining self-discipline and the ability to overcome myself").

The factors discouraging from studying at the UoD largely replicates those related to CAF (see below). Thus, especially distance, signing on for many years, and the stage without student status are mentioned.

Furthermore, aspects discouraging from military career in CAF were examined - the results are shown in Figure 5.

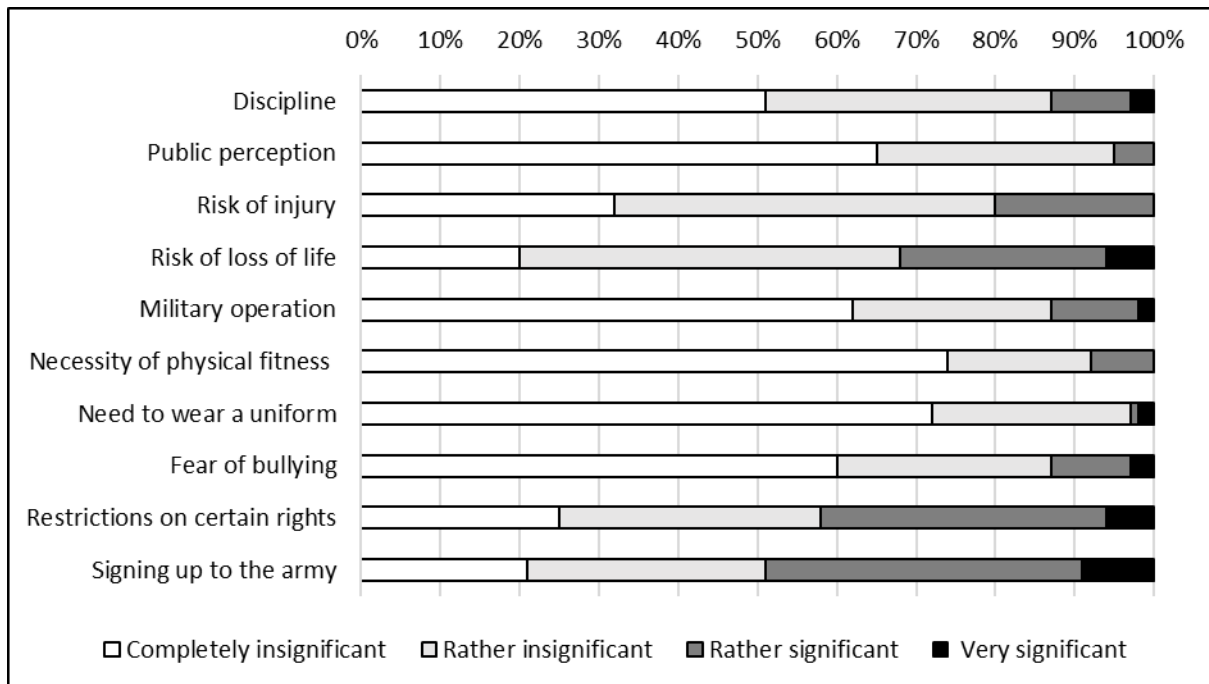


Figure 5: Discouraging factors from joining CAF

Generally, the submitted factors turned out to be in most cases not very discouraging. Mostly students perceived signing up to the army, restrictions on some rights (e.g. entrepreneurship or entering politics) and the risk of loss of life or injury as discouraging. The open-ended question was filled by 43 respondents. The most frequently mentioned aspects can be classified into the following groups:

- Long distance from home and uncertainty accompanying the military profession (22 respondents). Most students experience separation from their families while studying at the UoD and further on when they are placed as a commander in a particular troop. Related to this is the uncertainty connected with a location of the troop where the commander will work after graduation. The problem is also that the applicant does not know at which troop he/she will be needed and whether the given job will correspond to his/her preferences (*"fear of not getting to the specialisation I want"*).
- Potential negative aspects (perceived or real) connected with the military profession - *"demanding, stress, possibility of burnout", "possible arrogant behaviour of superiors", "poorer logistics and organisation of command", "underfunding of the army" or "collective guilt"*.
- More difficult coordination of military and personal life – *"In military, possibility of career growth is more affected by family life (especially for women)", "less possibility to find and keep a partner", "less time for family"*. These concerns are mentioned in some form by 5 respondents.

The motivation of young people is certainly influenced (positively or negatively) by their surroundings - family, partners, friends or other people. A closed and open-ended question verified the intensity and direction of their support. The results are shown in Figure 6.

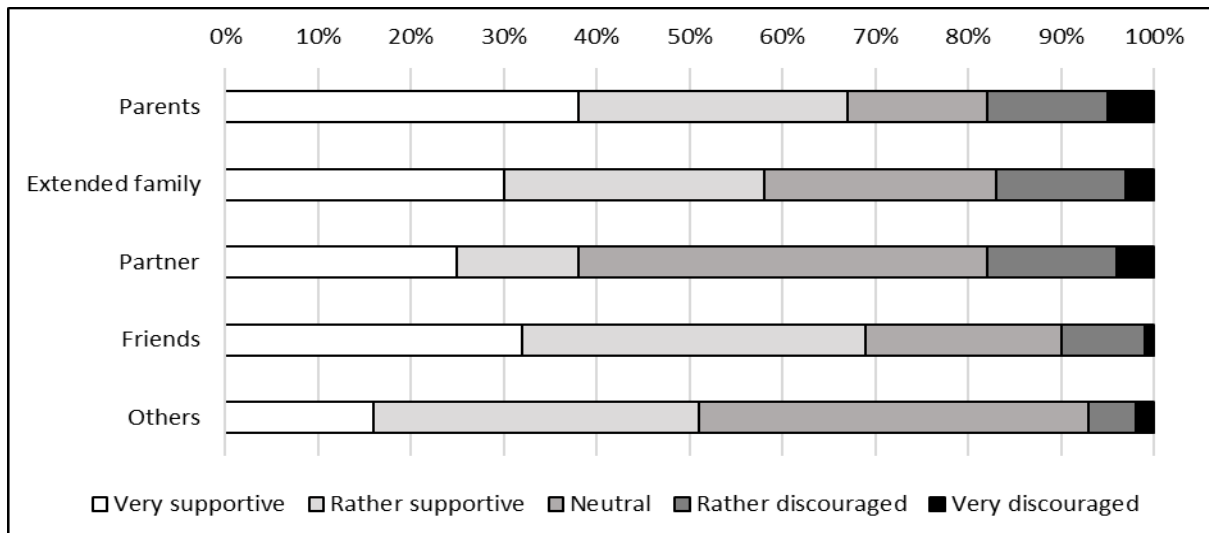


Figure 6: The influence of close ones on the decision to join the CAF

Almost 70% of respondents experienced strong or moderate support from family and friends. Partners and others are more often neutral (40% of respondents). 5% of respondents experienced a high degree of discouragement by parents, and less than 5% of respondents by other people. Less than 20% of respondents experienced rather or significantly discouraging reaction from their family and partner, and only minimally from friends and others.

The fifth research question focuses on determining the influence of the current security situation in the vicinity of the Czech Republic - Russia-Ukraine conflict. The conflict has begun at the exact time of respondents' consideration regarding the military enlistment (submission of application to the UoD). 129 out of 179 respondents answered the open question connected with this topic. Following categories of answers were found by open coding process (in descending order of frequency of occurrence):

- *Yes, the current situation supported my decision positively* - 67 (37%) of all respondents. The students state that the security situation has even strengthened their determination to be ready to defend their homeland. They are often very resolute in their attitude - "...definitely, unequivocally, the situation supported my conviction", "Before the war I thought about the army, but after the war started I was determined", "The war proved that the army is still very much needed". Such an awareness and reminder of the importance of the army is mentioned in several answers ('the situation just convinced me of the importance and purpose of the army').
- *Yes, the situation influenced my decision rather negatively*. A total of 11 interviewees answered in this way, however, it appears seven times that this insecurity came from the family. Only 4 respondents admit that they themselves were surprised by the situation - "You realise that you can really fight for your life in a war at a young age", "I was confused by how close the conflict broke out to us", "Yes, I was uncertain, I can not imagine going to war".
- *No, the deteriorating security situation did not affect me* - 48 (27%) of all respondents. Students often express a high level of awareness of the possibility of an armed conflict breaking out even in times of peace. Therefore, the situation has not affected them so much - "Conflicts and wars are always taking place in the world, I am and I was aware of that", "There will always be some armed conflict in the world. Now it is just closer than our generation is used to" or "The situation has not affected me, I believe in NATO and I always wanted to become a NATO soldier".

5. Discussion

The importance of motives for military career choice was measured on selected motivational factors reflecting the specifics of the military profession – work evaluation (salary, benefits and moral evaluation), work characteristics and other motivators. Moreover, the factors discouraging from joining the CAF were analysed as well as the impact of the Russia-Ukraine conflict on young people's decision to become soldiers.

Salary is very or rather significant factor for more than 90% respondents while the employee benefits are the least important group of motivators (but still quite important). On contrary, the work characteristics are the most significant – especially career growth, adventure and adrenaline activities, security of employment and

team atmosphere in military collective. The revealed reasons for joining the army are highly consistent with the studies of Ginexi et al. (1994), Moskos (1982) or Griffith (2008). Moreover, the research confirmed the results of Grigorov (2020), Woodruff et al. (2006), or Gade & Elig (1986). It highlighted career paths, job security, and self development opportunities as the primer reasons for military career. The research results of Helmus et al. (2018) is also in harmony. It stresses the significance of team spirit and collective atmosphere in the military community (need to belong somewhere, to share a sense of purpose etc.).

Other important criteria in deciding to join the CAF are connected with values and interests - patriotism, usefulness for society or interest in the military values and warfare. Additionally, respondents often mention the desire to help people, the opportunity for self-development or independence and admiration for the army. The importance of these "soft" motivators is confirmed also by the studies of Eighmey (2006), Lawrence & Legree (1996) or Griffith (2008). Woodruff et al. (2006) even revealed that patriotism and desire to serve the public play a key role in the decision-making process. The conclusion is further supported by the studies of Park & Avery (2016) or Lewis (2018).

The reasons for studying military university are, to some extent, in line with the reasons for joining the army as whole - salary, better future employability, the possibility of enjoying sports while studying, obtaining a university degree, self-development and student life. The finding is in line with Barr's studies (2016 and 2019) confirming that financial incentives plays a significant role in young adults' decisions to pursue military education and career.

As for the discouraging factors, the most crucial were signing up to the army, restriction of certain rights and risk of loss of life or injury. In the open question respondents add distance from home and some other weaknesses of military, e.g. the time-consuming nature of a military career.

According to Gibson et al. (2007), Griffith (2008), Griffith (2011) or Kleykamp (2006) the influence of peers and family members plays a crucial role in young adults' educational and career choices. In this research the impact of relatives is mentioned quite rarely. However, family, friends and partners are perceived by respondents as mostly supportive. Only a few cases of discouraging from joining the armed forces were noted.

The beginning of the Russia-Ukraine conflict meant rather a confirmation of the students' decision. Only individuals declare a concern arising from the deterioration of the security situation, mainly from the side of their family. A third of the respondents stated that the situation did not influence their decision, because the emergence of an armed conflict anywhere and at any time must be expected.

6. Conclusion

Based on the results of the research conducted with 179 first-year military students of the University of Defence, the main conclusions can be drawn, and the stated research question thereby answered. The most important motivators for join CAF are salary, career growth, adventure, job security, patriotism, team spirit and interest in military values. On the contrary, the dissuasive aspects are mainly enlistment for 10 or more years, restriction of certain rights, risk of loss of life or injury and distance from home. The outbreak of the Russia-Ukraine conflict reinforced the decision of the majority of respondents to join the CAF. Only individuals declare it has made them or their families insecure. However, in general, those around respondents - family, friends and partners - tend to express support for their beliefs or at least a neutral attitude.

The conclusions of the research are valid for the given sample and are intended to be further verified with the help of quantitative and qualitative research. It would be for example usefull to analyse differences between motivational factors of students of the UoD and recruits joining the CAF directly (to military troops). It is possible to compare results with other security forces (such as the fire department and police department personnel) or make an international military comparison. Another interesting direction would be a longitudinal study of this research sample to find out how the motivational factors change over time.

All volunteer forces, like any other employer, are looking for their own positions and competitive advantage in the labour market. Therefore, it is important for the Ministry of Defence of CR to learn about and ascertain the motives for joining the CAF. Understanding the motivation of the candidates can help educational institutions and policymakers to develop appropriate recruitment and marketing strategy and support systems to better meet the diverse needs and aspirations of young individuals considering a military career.

References

- Adair, J. E. (2009). *Leadership and motivation: the fifty-fifty rule and the eight key principles of motivating others*, London: Kogan Page Limited.
- Armstrong, M., Stephens T. (2008). *Management a leadership*. Praha: Grada.
- Bass, B. M., Riggio, R.E. (2006). *Transformational leadership*. 2nd ed. New York: Psychology Pres
- Barr, A. (2016). "Enlist or enroll: Credit constraints, college aid, and the military enlistment margin". *Economics of Education Review*, 51(C), 61-78.
- Barr, A. (2019). "Fighting for education: Veterans and financial aid". *Journal of Labor Economics*, 37(2).
- Ben-Dor, G., Pedahzur, A., Canetti-Nisim, D., Zaidise, E., Perliger, A., & Bermanis, S. (2008). "I versus we: Collective and individual factors of reserve service motivation during war and peace". *Armed forces & society*, Vol. 34, No 4, pp 565-592.
- Blanchard, K. H., Conley R. (2022). *Simple truths of leadership: 52 ways to be a servant leader and build trust*. Oakland, California: Berrett-Koehler.
- Blažek, L. (2011). *Management*, Grada: Praha.
- Daft, R.L., Kendrick, M. & Vershinina, N. (2010) *Management*, Cengage Learning: UK.
- Eighmey, J. (2006). "Why do youth enlist? Identification of underlying themes". *Armed Forces & Society*, Vol 32, No 2, pp 307-328.
- Gade, P. A., & Elig, T. W. (1986). "Enlisting in the US Army: The citizen soldier in an all-volunteer force". In *Youth Motivation and Military Service*. FORUM international, Bd (Vol. 6).
- Gibson, J. L., Griepentrog, B. K., & Marsh, S. M. (2007). "Parental influence on youth propensity to join the military". *Journal of Vocational Behavior*, 70(3), 525-541.
- Ginexi, E. M., Miller, A. E. and Tarver, S. M. (1994). *A Qualitative Evaluation of Reasons for Enlisting in the Military*. Defense Manpower Data Center Arlington VA.
- Griffith, J. (2008). "Institutional motives for serving in the US Army National Guard: Implications for recruitment, retention, and readiness". *Armed Forces & Society*, 34(2), 230-258.
- Griffith, J. (2011). "Contradictory and complementary identities of US Army reservists: A historical perspective". *Armed Forces & Society*, 37(2).
- Grigorov, G. (2020). "Motivation for Choosing and Practicing the Military Profession". *International conference Knowledge-based organization*, Vol. 26, No. 2, pp 162-169.
- Helmus, T. C., Zimmerman, S. R., Posard, M. N., Wheeler, J. L., Ogletree, C., Stroud, Q., & Harrell, M. C. (2018). *Life as a private: A study of the motivations and experiences of junior enlisted personnel in the US Army*. RAND ARROYO CENTER SANTA MONICA CA.
- Kleykamp, M. A. (2006). "College, jobs, or the military? Enlistment during a time of war". *Social science quarterly*, 87(2), 272-290.
- Lawrence, G. H., & Legree, P. J. (1996). *Military Enlistment Propensity: A Review of Recent Literature*.
- Lewis, A. R. (2018). *The American culture of war: A history of US military force from World War II to Operation Enduring Freedom*. Routledge.
- Lerro, P., Laurence, J. H., & Ramsberger, P. F. (1993). *Influences on the Military Enlistment Decision-Making Process: Findings from the 1991 Youth Attitude Tracking Study*.
- Maddock, R. C., FULTON R.L. (1998). *Motivation, emotions, and leadership: the silent side of management*. Westport, Conn.: Quorum.
- Moskos, C. C. (1982). "Social considerations of the all-volunteer force". USA: *Military service in the US*.
- Park, S., & Avery, E. J. (2016). "Effects of patriotism and celebrity endorsement in military Advertising". *Journal of Promotion Management*, 22(5), 605-619.
- Pernica, B. (2007) *Profesionalizace ozbrojených sil: trendy, teorie a zkušenosti*. Ministerstvo obrany ČR, Praha.
- Shelton, J.E. (2012). *Transformational leadership : trust, motivation and engagement: trust, motivation and engagement*. Bloomington, Indiana: Trafford Publishing.
- Woodruff, T., Kelty, R., and Segal, D. R. (2006) "Propensity to serve and motivation to enlist among American combat soldiers", *Armed Forces & Society*, Vol 32, No 3, pp 353-366.
- Zákon o vojácích z povolání: Zákon č. 221/1999 Sb. (1999) Česká republika. Parlament ČR.

The Great Resignation and Intrapreneurship as a Strategy to Attract and Retain Staff in Services

Maria de Lurdes Calisto

Estoril Higher Institute for Tourism and Hotel Studies, CiTUR - Centre for Tourism Research, Development and Innovation, Estoril, Portugal

lurdes.calisto@eshte.pt

Abstract: Many employees from the Millennials and Gen Z cohorts are abandoning the hotel industry after COVID-19. The dissatisfaction of hotel workers with their working conditions has accelerated the Great Resignation, a term used to refer to the higher-than-normal quit rate in an industry. Consequently, the number of unfilled jobs is high, and attraction and retention have become a strategic concern for the hotel industry. Considering that Millennials and Gen Z are entrepreneurial-oriented, in this paper, we study how intrapreneurship, an approach that encourages employees to develop innovative ideas and solutions within a company, is one of the ways hotel companies attract qualified people. The study is qualitative, and data was collected through the recruitment sites of the leading hotel companies worldwide since these websites provide distinct information to potential job candidates beyond the available job descriptions. The hotel industry is highly competitive, with several brands, each with unique characteristics. However, they depend on their employees to materialise their brand's promises. To ensure personal-organisational fit, companies should give the right signals when presenting to potential candidates so that they may decide when receiving and interpreting these signals if they fit the organisation and are aligned with what that company offers and demands. Findings enhance our comprehension of the use by large hotel companies of employees' preference for behaving intrapreneurially as a strategy to attract and retain qualified staff. Results may also guide human resources practices in hotel companies and other service industries that seek to attract and retain talented professionals in an intensely competitive market. In addition, the results may serve as a basis for future studies on intrapreneurship in service companies. In an era when service companies struggle to attract and retain workers, this paper highlights how intrapreneurship may be a solution with a double benefit – staff attraction/retention and innovation. Although the study focuses on hospitality, the contribution is relevant to most services.

Keywords: Intrapreneurship, Intrapreneurial behaviour, Human resources, Attraction and retention, Hotel, Services

1. Introduction

In today's dynamic labour market, new workplace relationships have emerged, challenging traditional conceptions and expectations of work. 'The Great Resignation' was the term used to refer to the higher-than-normal quit rate among American workers since 2021 (Cook, 2021). This trend also reaches many Western European countries (YPulse, 2021), significantly affecting tourism and hospitality (Liu-Lastres, Wen and Huang, 2023). Millennials, Gen Z and female workers in the wake of COVID-19 are abandoning the industry (Croes, Semard and Rivera, 2021). Consequently, the number of unfilled jobs is high, and as the hospitality industry is recovering and taking advantage of the significant growth in demand, attraction and retention have become a strategic concern.

Several studies indicate that hotel employees often face precarious working conditions, including low income and long, irregular shifts (e.g., Karatepe et al., 2014). According to Liu-Lastres, Wen and Huang (2023), the dissatisfaction of hotel workers with their working conditions has accelerated the Great Resignation. The authors suggest how practitioners may deal with these workforce challenges, one of which is that "*Recruitment advertisements should highlight the career path and skillsets that potential employees can gain from the role rather than just listing job responsibilities and financial incentives. (...) employers can briefly describe the opportunities and challenges those potential employees can learn from the job...*" (Liu-Lastres, Wen and Huang, 2023, p. 243).

Considering that Millennials and Gen Z are entrepreneurial-oriented (Dreyer and Stojanová, 2023), we argue that one of the ways hotel companies may attract qualified people is through intrapreneurship. Intrapreneurship is an approach that encourages employees to develop innovative ideas and solutions within a company. Intrapreneurs act as entrepreneurs within the organisation, testing new ideas, experimenting with new processes and projects, and helping the company adapt and grow. This behaviour can particularly benefit service companies (Calisto and Sarkar, 2017a), which must adapt quickly to market changes and customer needs and where employees usually have a strategic role by directly interacting with customers.

This qualitative study aims to analyse the use of intrapreneurship by large hotel companies to attract and retain staff in an era when these companies struggle to do that, especially in countries where the consequences of the so-called Great Resignation are significant. For this purpose, data collected through the recruitment websites of

the leading hotel companies will be used. On recruitment websites, companies provide distinct information to potential job candidates that go beyond the available job descriptions (Baum and Kabst, 2014), presenting their values (Behrend, Baker and Thompson, 2009), vision, mission, internal environment, and culture (Cascio and Graham, 2016). From these websites, the intrapreneurial skills valued by companies were identified. The hotel companies analysed were selected based on their size at the global level.

Findings enhance our comprehension of the use by large hotel companies of employees' preference for behaving intrapreneurially as a strategy to attract and retain qualified staff. Results may also guide human resources practices in hotel companies and other service industries that seek to attract and retain talented staff in a highly competitive market. In addition, the results may serve as a basis for future studies on intrapreneurship in service companies.

In an era when service companies struggle to attract and retain workers, this paper highlights how intrapreneurship may be a solution with a double benefit – staff attraction/retention and innovation. Although the study focuses on hospitality, the contribution is relevant to most services.

Sections 2 and 3 present a literature review on attracting and retaining employees and intrapreneurship and human resources practices. In section 4, the methodology is presented. Section 5 addresses the results and their discussion. Section 6 presents the conclusions of the paper.

2. Attraction and Retention Of Employees – the Relevance Of Signalling the Person-Organisation fit

According to the resource-based view, intangible resources of high value hold the most significant potential for fostering a competitive edge (Barney, 2001), which has given support to the idea that people are strategically crucial to the company's success and that their attributes (including education, experience, and skills) affect organisational outcomes (Van Esch, Wei and Chiang, 2018). Hotels rely on their employees to create competitive advantages by providing exceptional customer service and identifying opportunities for improvement. Since the product of these organisations is the service experience, employees play a fundamental role in the quality of service and, consequently, in customer loyalty and satisfaction (Baum, 2015). Therefore, human resource management practices are pertinent from a strategic management standpoint due to their significant influence on organisational outcomes by shaping employee behaviours and attitudes (Wood and Menezes 1998).

The hotel industry is highly competitive, with several brands, each with unique characteristics. However, hotel companies all share a common element: the dependence on their employees to materialise the hotel brand's promises (Buil, Martínez and Matute, 2016). If employees do not align completely with the brand's values, customers might perceive employee service as unauthentic (Siriani et al., 2013), negatively affecting brand image and reputation (Russell and Brannan, 2016).

In this context, one of the aims of human resource practices is to achieve person-organisation fit – i.e., the compatibility between an employee and a company (Kristof, 1996).

Person-organisation fit (P-O fit) also plays a role in attracting and retaining talent in the hospitality industry. Job seekers are more likely to apply for positions that align with their expectations, contributing to the efficiency of the recruitment and selection process. Furthermore, a strong fit between frontline employees and organisational values enhances dedication, emotional engagement, and vigour, ultimately improving employee retention and performance. Therefore, more than ensuring service quality (Buil, Martínez and Matute, 2016), the match between employer and employee also positively influences employee retention (De Cooman et al., 2009).

According to the signalling theory (Spence, 1973), individuals and organisations are constantly sending and receiving signals, namely verbal. These signals help receivers reduce their knowledge gap about the signaller, leading individuals and organisations to make better-informed decisions. The signalling theory provides a valuable framework for studying companies' communications regarding recruitment (Connelly et al., 2011).

To ensure the P-O fit, firms should give the right signals when presenting to potential candidates (Connelly et al., 2011) so that potential candidates may decide when receiving and interpreting these signals, if they fit the organisation and if they are aligned with what that company offers and demands from employees (Elving et al., 2013). Job candidates are attracted to employers depending on what they believe will be provided (Backhaus and Tikoo, 2004) and avoid applying for jobs not in line with their desires (De Cooman et al., 2009).

The match between the organisation's values and the employees also increases employee retention (De Cooman et al., 2009), increasing employees' dedication, emotional engagement, and vigour (Buil, Martínez and Matute, 2016). Therefore, companies should invest in their websites (Cascio and Graham, 2016) to differentiate as employers (Elving et al., 2013), and the human resources department needs to communicate the firm's employment experience so that potential candidates may evaluate if they fit in the firm while retaining current employees (Coaley, 2021).

3. Intrapreneurial Behaviour and Human Resource Practices

The most successful firms learn continuously and react rapidly, increasing their capacity to generate innovation. One of the ways for firms to achieve that is through entrepreneurial actions from within, which is more a question of culture and employee behaviour than formal research and development processes (Burgelman, 1983). Employees who exhibit autonomous strategic behaviour are commonly referred to as intrapreneurs. These employees often take the initiative to realise their ideas without managerial stimulus, which Sundbo (1996) calls 'free entrepreneurship'. Some of those ideas might receive formal approval and even integrate the business concept.

Thus, intrapreneurial behaviour (IB) is a discretionary extra-role behaviour from employees to benefit the organisation. An extra-role behaviour differs from in-role performance, which is related to an employee's expected job duties. Extra-role behaviours do not appear in an employee's job description and contribute to the organisation's or its members' well-being. Therefore, intrapreneurs are "employees who proactively engage in actions outside their usual job description with the intention to innovate" (Calisto and Sarkar, 2017b, p. 46). IB may translate into a generalised behaviour across the organisation, a form of 'collective entrepreneurship', according to Ribeiro-Soriano and Urbano (2009).

Intrapreneurs are similar to independent entrepreneurs as far as the activities they develop. However, intrapreneurial behaviour belongs to the domain of 'employee behaviour' since it occurs within an organisational context, facing limitations and opportunities for support from that context. One can find human resources management practices as one of the determinants of intrapreneurial behaviour. These practices may create a supportive climate (Ferris et al., 1998) and shape employee behaviour and attitudes (Whitener, 2001). According to the Job Demand-Resources theory (JD-R) (Bakker and Demerouti, 2014), employees thrive in contexts characterised by demanding jobs (i.e., challenges) as long as they have high job or personal resources available, thus reaching personal and organisational goals and fostering work engagement and increased performance (Bakker et al., 2014). The JD-R theory also postulates that there is a reinforcing cycle of motivation (Bakker and Demerouti, 2014), which may explain why engaging in IB leads to employees' personal growth in self-efficacy, optimism, and resilience (Gawke, Gorgievski and Bakker, 2017), consequently leading to higher IB. When an employee successfully implements an innovative idea, they will feel more efficacious and expect similar IB results in the future (Marvel et al., 2007), contributing to employee retention.

4. Methodology

This study was based on online digital organisational documents (Ventresca and Mohr, 2002) from hotel chains regarding their search for entrepreneurial-oriented candidates. The collected data came from the information posted on the firms' recruiting websites.

Firstly, the hotel companies in the sample were obtained based on a purposive method. Due to the large number of hotel chains globally, for practical reasons, only the ten largest chains globally were selected for this study, considering the number of hotels in the chain. Because large international hotel chains operate in many different contexts, they offer an opportunity to have a global perspective. Table 1 shows the hotel chains considered in this study, and Table 2 presents the URLs to the recruitment websites of these hotel chains.

The recruitment websites were analysed to find words and expressions that suggested that these chains signalled that they searched for candidates with attitudes and behaviours usual in intrapreneurs and offered a culture to which entrepreneurial-oriented candidates would be attracted. The search was restricted to the recruitment websites of these companies, usually identified with the word 'job' or 'career' in the URL. Every time that following a link the website changed to another part of the corporation's website, the search stopped.

Table 1: TOP-10 Hotel Chains, by no. of hotels (2022)

Rank	Chain	No. hotels	Countries	No. rooms
1 st	Wyndham Hotels & Resorts	~ 9 300	75	~ 830 000
2 nd	Marriott International	~ 7 500	131	~ 1 400 000
3 rd	Choice Hotels International	~ 7 100	41	~ 600 000
4 th	Hilton Worldwide Holdings	~ 6 200	118	~ 980 000
5 th	IHG (InterContinental Hotels Group)	~ 5 700	100	~ 880 000
6 th	Accor	~ 4 800	100	~ 700 000
7 th	Best Western Hotels & Resorts	~4 700	90	~ 400 000
8 th	G6 Hospitality	~1 500	2	~ 110 000
9 th	Red Lyon Hotels	~1 400	2	~ 90 000
10 th	Radisson Hotel Group	~1 100	115	~200 000

Source: <https://www.tbsnews.net/features/explorer/10-biggest-hotel-chains-world-303262> and <https://www.alltopeverything.com/top-10-largest-hotel-chains-in-the-world/>

The search words used were based on Neessen et al. (2019). According to Neessen et al. (2019), intrapreneurs are characterised by the following behaviours: innovativeness/creativity, proactiveness, opportunity recognition/exploitation, risk-taking /tolerance for failure, and networking. However, during the search process, other behaviours that have been associated with intrapreneurs in the literature have been found, such as leadership (Mohedano-Suanes and Benítez, 2018), initiative (Timmons and Spinelli, 2004), communication skills (Farrington, Louw and Venter, 2012), and voice behaviour (Wennekers and De Jong, 2008).

Table 2: TOP-10 Hotel Chains' recruitment websites

Chain	URL
Wyndham Hotels & Resorts	https://careers.wyndhamhotels.com/
Marriott International	https://careers.marriott.com/en-GB/
Choice Hotels International	https://careers.choicehotels.com/
Hilton Worldwide Holdings	https://jobs.hilton.com/emea/en
IHG (InterContinental Hotels Group)	https://careers.ihg.com/en/
Accor	https://careers.accor.com/global/en
Best Western Hotels & Resorts	https://jobs.bestwestern.com/
Red Lyon Hotels / Sonesta group	https://careers.sonesta.com/us/en/home
Radisson Hotel Group	https://www.radissonhotels.com/en-us/corporate/careers

5. Findings and Discussion

Results reveal that the major hotel chains in the world signal they are looking for candidates with a propensity to behave intrapreneurially. Figure 1 shows the number of occurrences in the studied websites for each term (or similar), revealing that the top 10 hotel companies, as a whole, are looking for 11 skills usually associated with intrapreneurs. The most sought-after skills are leadership, networking, innovation, and voice. According to Mohedano-Suanes and Benítez (2018), intrapreneurs can lead and are viewed by others as leaders "not by what they say, but what they do" and "they are change agents driving innovations" (p. 117). Networking is also essential to be intrapreneurial (Razavi and Ab Aziz, 2017). Voice is a promotive behaviour that expresses constructive challenge to improve things rather than criticise (Wennekers and De Jong, 2008).

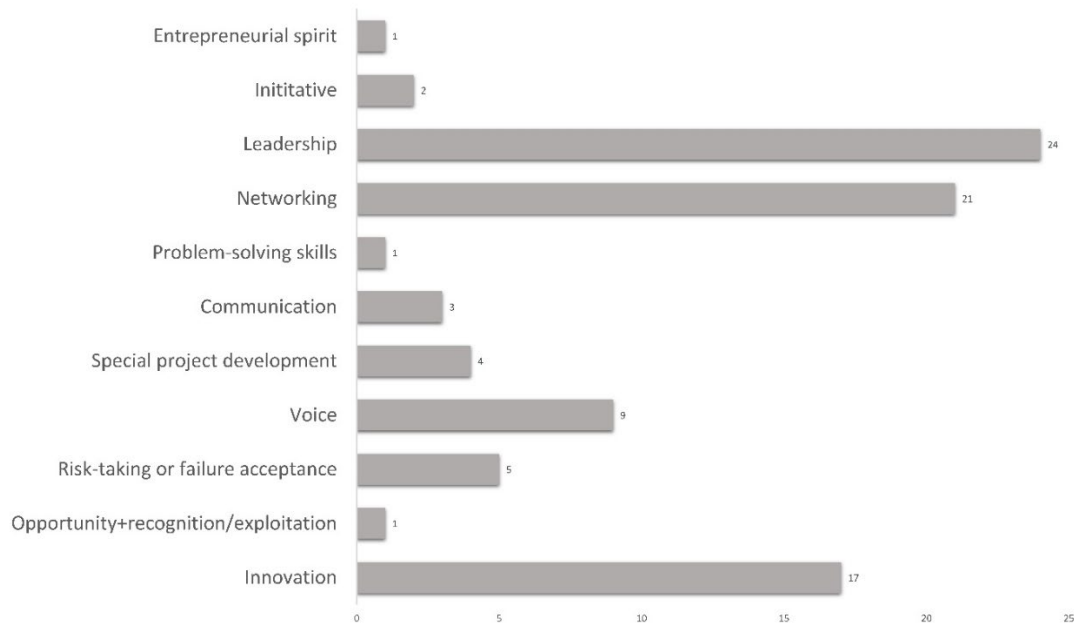


Figure 1: Number of occurrences for each term in the ten websites as a whole

There are, however, differences between companies. Wyndham Hotels & Resorts (rank 1st), Choice Hotels International (rank 3rd), Accor (rank 6th), and G6 Hospitality (rank 8th) seem more interested than other companies in attracting entrepreneurial-oriented employees (Figure 2).

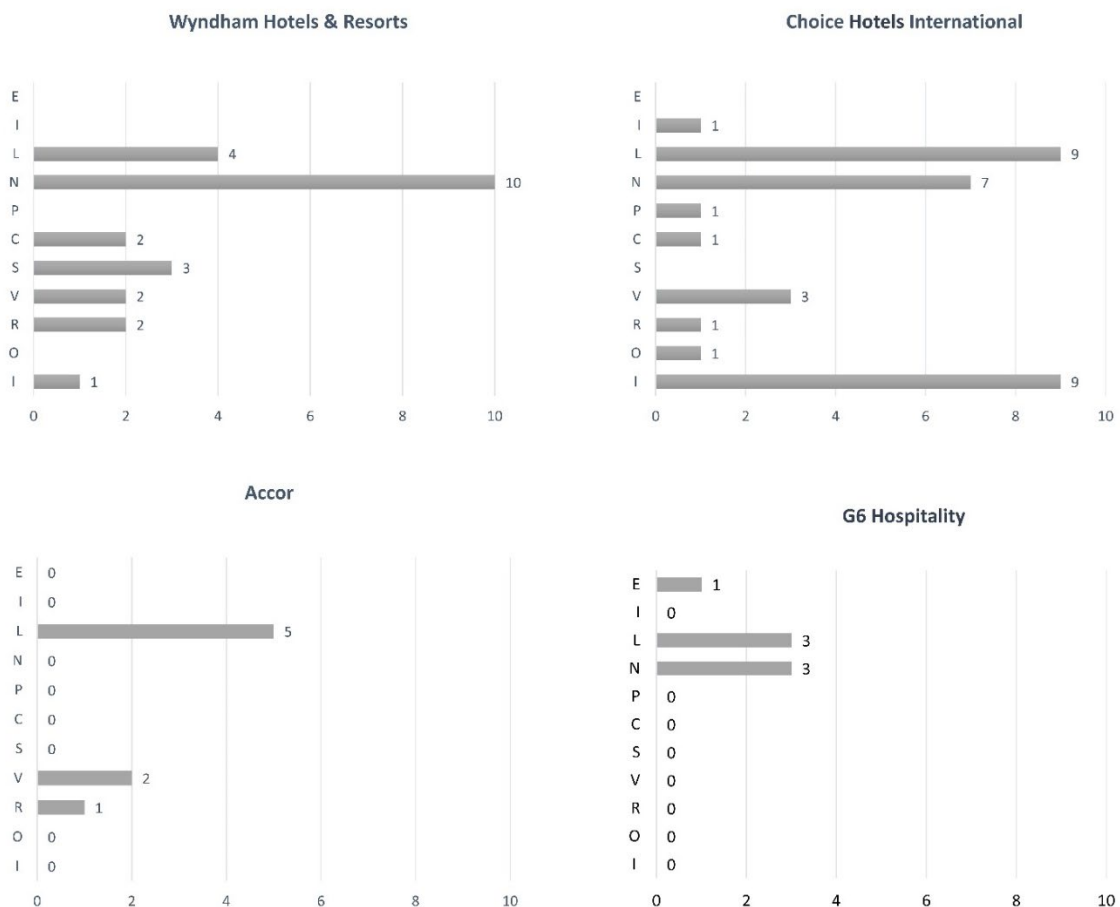


Figure 2: The top four hotel chains on intrapreneurial skills requirements

Wyndham Hotels & Resort claims that it provides "*...an environment that acknowledges and leverages (...) leadership...*" and that they "*...invite team members to (...) take on leadership roles...*". The company also offers "access" and "exposure" to "networking opportunities", and they "*...invite team members to engage with (...) diverse partners*".

Choice Hotels International signals that they are developing the "*...next generation of (...) leaders*", that they "*...empower individuals to become more effective (...) leaders*", and that they seek candidates that "*...focuses on leading yourself and others...*". They also claim that "*...support individuals as they manage numerous changes*" and tap "*...into the diversity (...) to ideate (...) on enterprise projects or business challenges*". They even offer interns the possibility to "*...work on projects that will shape the future of hospitality*." Choice also provides "*...a culture where (...) sharing ideas is constant*" and is trying to attract candidates that "*...embody a commitment to connect...people...*".

Accor offers the candidates a "*...strength-based leadership culture*" and "leadership training" and states they "*value all voices*" and seek candidates that "*dare to challenge the status quo!*".

G6 Hospitality claims they provide "*...team members [with] leadership coaching...*" and "*...enhance the leadership capabilities*". They also seek candidates who can "connect with the community, team members and leadership."

One of the reasons why these leading hotel companies may be seeking entrepreneurial-oriented candidates is because intrapreneurial behaviour is positively related to commitment to the workplace (Holt et al., 2007), which promotes motivation and job performance (Ahmad, Wasay and Ullah, 2012), but also employee retention. Additionally, Calisto and Sarkar (2023) found that the intrapreneurial activities of T&H employees do not conflict with their in-role tasks; T&H intrapreneurs are good job performers who can adequately balance extra-role and in-role tasks. In fact, according to the authors, the higher the level of IB, the higher the in-role job performance of T&H employees.

Another reason is that the latest generations are one of the best-educated cohorts in the workplace, who are technologically savvy, prefer to work collaboratively, and believe in solving problems with specific expertise (Ferri-Reed, 2010).

6. Conclusion

In this paper, we aimed to analyse the use of intrapreneurship by large hotel companies to attract and retain staff.

Results reveal that the top 10 hotel companies, as a whole, are looking for 11 skills usually associated with intrapreneurs. Leadership, networking, innovation, and voice are the most sought-after skills. Results also show differences between companies, with four more interested than the other companies in attracting entrepreneurial-oriented employees.

This paper enriches the literature by bringing attention to the fact that leading hotel companies aim to attract and retain employees who are change agents, able to voice the need to change, mobilise their networks and lead others to achieve the needed change. Further studies are required to understand how this is generalisable to the industry for smaller chains and independent hotels.

The paper also draws the attention of hotel and human resources managers to how the company's career website plays a role in attracting suitable candidates and thus increases the chances of retaining them. Hospitality career websites serve as vital platforms connecting job seekers with employers in the industry. These websites facilitate the exploration of diverse career opportunities and allow companies to showcase their unique selling points, company culture, and growth prospects.

Organisations must effectively communicate their employment experience internally and externally to attract and retain top talent. Clear and consistent messaging regarding organisational values, career development opportunities, and work-life balance is crucial for potential candidates to evaluate their fit within the company. Additionally, effective communication aids in retaining current employees since it reinforces the organisation's commitment to their growth and well-being.

Finally, managers must consider that an entrepreneurial-oriented culture, beyond attracting younger candidates, also contributes to retention. Employees encouraged to develop innovative ideas and projects within the company may feel more engaged and motivated, leading to increased job satisfaction. In addition,

intrapreneurship can offer employees opportunities for professional growth and development, making the company a more attractive workplace.

This study did not consider other website employment data, namely specific job advertisements, which might generate additional insights. Future studies should incorporate job advertisements to highlight differences across jobs.

Since the study was based on secondary data, some aspects of recruitment practices may not have been not fully understood. Future research should interview human resource managers and other hotel managers. Additionally, the hotel chain selection was based on the number of hotels. Distinct criteria could generate different results.

References

- Ahmad, M. B., Wasay, E. and Ullah, S. (2012) "Impact of employee motivation on customer satisfaction: Study of airline industry in Pakistan", *Interdisciplinary Journal of Contemporary Research in Business*, Vol 4, No 6, pp 531-539.
- Backhaus, K. and Tikoo, S. (2004) "Conceptualising and researching employer branding", *Career Development International*, Vol 9, No 5, pp 501-517.
- Bakker, A. B. and Demerouti, E. (2014) "Job demands–resources theory", *Well-being: A complete reference guide*, pp 1-28.
- Barney, J. B. (2001) "Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view", *Journal of Management*, Vol 27, No 6, pp 643-650.
- Baum, T. (2015) "Human resources in tourism: Still waiting for change? – A 2015 reprise", *Tourism Management*, Vol 50, pp 204-212.
- Baum, M. and Kabst, R. (2014) "The Effectiveness of Recruitment Advertisements and Recruitment Websites: Indirect and Interactive Effects on Applicant Attraction", *Human Resource Management*, Vol 53, No 3, pp 353–378.
- Behrend, T. S., Baker, B. A. and Thompson, L. F. (2009) "Effects of pro-environmental recruiting messages: The role of organisational reputation", *Journal of Business and Psychology*, Vol 24, No 3, pp 341–350.
- Buil, I., Martínez, E. and Matute, J. (2016) "From internal brand management to organisational citizenship behaviours: Evidence from frontline employees in the hotel industry", *Tourism Management*, Vol 57, pp 256-271.
- Burgelman, R. A. (1983). Corporate entrepreneurship and strategic management: Insights from a process study. *Management Science*, Vol 29, No 12, pp 1349-1364.
- Calisto, M. L. and Sarkar, S. (2017a) "Innovation and corporate entrepreneurship in service businesses", *Service Business*, Vol 11, No 3, pp 581-600.
- Calisto, M. L. and Sarkar, S. (2017b) "Organisations as biomes of entrepreneurial life: Towards a clarification of the corporate entrepreneurship process", *Journal of Business Research*, Vol 70, pp. 44-54.
- Calisto, M. L. and Sarkar, S. (2023) "Intrapreneurial behavior and in-role job performance across organisational ecosystems in tourism and hospitality", *International Journal of Tourism Research*, Vol 25, No 2, pp 236-248.
- Cascio, W. F. and Graham, B. Z. (2016) "New Strategic Role for HR: Leading the Employer-Branding Process", *Organization Management Journal*, Vol 13, No 4, pp 182–192.
- Coaley, P. C. (2021) "Online employer reviews: A glimpse into the employer-brand benefits of working in the Las Vegas hotel/casino industry", *Journal of Human Resources in Hospitality & Tourism*, Vol 20, No. 3, pp 417-441.
- Connelly, B. L., Certo, S. T., Ireland, R. D. and Reutzel, C. R. (2011) "Signaling Theory: A Review and Assessment", *Journal of Management*, Vol 37, No 39, pp 39-68.
- Cook, I. (2021) "Who is driving the great resignation?", available at <https://hbr.org/2021/09/who-is-driving-the-great-resignation>
- Croes, R., Semard, K. and Rivera, M. (2021) "The state of the hospitality industry 2021 employment report: COVID-19 labor force legacy", available at: <https://hospitality.ucf.edu/wp-content/uploads/sites/2/2021/10/state-of-the-hospitality-10282021web-compressed.pdf>
- De Cooman, R., De Gieter, S., Pepermans, R., Hermans, S., Du Bois, C., Caers, R. and Jegers, M. (2009) "Person–organisation fit: Testing socialisation and attraction–selection–attrition hypotheses", *Journal of Vocational Behavior*, Vol 74, No 1, pp 102-107.
- Dreyer, C. and Stojanová, H. (2023) "How entrepreneurial is German generation Z vs. generation Y? A literature review", *Procedia Computer Science*, Vol 217, pp 155-164.
- Elving, W. J. L., Westhoff, J. J. C., Meeusen, K. and Schoonderbeek, J. W. (2013) "The War for Talent the Relevance of Employer Branding in Job Advertisements for Becoming an Employer of Choice", *Journal of Brand Management*, Vol. 20, No 5, pp 355–373.
- Farrington, S. M., Louw, M. J. and Venter, D. J. L. (2012) "Entrepreneurial intentions: Demographic perspectives of South African business students", *South African Journal of Business Management*, Vol 43, pp 41–49.
- Ferri-Reed, J. (2010) "The keys to engaging millennials", *The Journal for Quality and Participation*, Vol 33, No 1, pp 31–33.
- Ferris, G. R., Arthur, M. M., Berkson, H. M., Kaplan, D. M., Harrell-Cook, G. and Frink, D. D. (1998) "Toward a social context theory of the human resource management-organisation effectiveness relationship", *Human Resource Management Review*, Vol 8, No 3, pp 235-264.

- Gawke, J. C., Gorgievski, M. J. and Bakker, A. B. (2017) "Employee intrapreneurship and work engagement: A latent change score approach", *Journal of Vocational Behavior*, Vol 100, pp 88-100.
- Holt, D. T., Armenakis, A. A., Feild, H. S. and Harris, S. G. (2007) "Readiness for organisational change: The systematic development of a scale", *The Journal of Applied Behavioral Science*, Vol 43, No 2, pp 232-255.
- Karatepe, O. M., Beirami, E., Bouzari, M. and Safavi, H. P. (2014) "Does work engagement mediate the effects of challenge stressors on job outcomes? Evidence from the hotel industry", *International Journal of Hospitality Management*, Vol 36, pp 14-22.
- Kristof, A. L. (1996) "Person-organisation fit: An integrative review of its conceptualisations, measurement, and implications", *Personnel Psychology*, Vol 49, No 1, pp 1-49.
- Liu-Lastres, B., Wen, H. and Huang, W. J. (2023) "A reflection on the Great Resignation in the hospitality and tourism industry", *International Journal of Contemporary Hospitality Management*, Vol 35, No 1, pp 235-249.
- Marvel, M. R., Griffin, A., Hebda, J. and Vojak, B. (2007) "Examining the technical corporate entrepreneurs' motivation: Voices from the field", *Entrepreneurship Theory and Practice*, Vol 31, No 5, pp 753-768.
- Mohedano-Suanes, A. and Benítez, D. G. (2018) "Intrapreneurs: Characteristics and behavior", *Inside the mind of the entrepreneur: Cognition, personality traits, intention, and gender behavior*, pp 109-119.
- Neessen, P. C., Caniëls, M. C., Vos, B. and De Jong, J. P. (2019) "The intrapreneurial employee: toward an integrated model of intrapreneurship and research agenda", *International Entrepreneurship and Management Journal*, Vol 15, pp 545-571.
- Razavi, S. H. and Ab Aziz, K. (2017) "The dynamics between entrepreneurial orientation, transformational leadership, and intrapreneurial intention in Iranian R&D sector", *International Journal of Entrepreneurial Behaviour & Research*, Vol 23, No 5, pp. 769–792.
- Ribeiro-Soriano, D. and Urbano, D. (2009) "Overview of collaborative entrepreneurship: an integrated approach between business decisions and negotiations", *Group Decision and Negotiation*, Vol 18, pp. 419-430.
- Russell, S. and Brannan, M. J. (2016) "Getting the Right People on the Bus: Recruitment, selection and integration for the branded organisation", *European Management Journal*, Vol 34, No 2, pp 114-124.
- Sirianni, N. J., Bitner, M. J., Brown, S. W. and Mandel, N. (2013) "Branded service encounters: Strategically aligning employee behavior with the brand positioning", *Journal of Marketing*, Vol 77, No 6, pp 108-123.
- Spence, M. (1973) "Job Market Signaling", *Quarterly Journal of Economics*, Vol 87, No 3, pp 355–374.
- Sundbo, J. (1996) "The balancing of empowerment. A strategic resource based model of organising innovation activities in service and low-tech firms", *Technovation*, Vol 16, No 8, pp 397-446.
- Timmons, J. A. and Spinelli, S. (2004), *New Venture Creation: Entrepreneurship for the 21st Century* McGraw-Hill/Irwin: New York, NY, USA.
- Van Esch, E., Wei, L. Q. and Chiang, F. F. (2018) "High-performance human resource practices and firm performance: The mediating role of employees' competencies and the moderating role of climate for creativity", *The International Journal of Human Resource Management*, Vol 29, No 10, pp 1683-1708.
- Ventresca, M. J. and Mohr, J. (2002) "Archival methods in organisation analysis", *Companion to organisations*, pp 805-828.
- Wennekers, S. and De Jong, J. (2008) "Intrapreneurship; conceptualising entrepreneurial employee behaviour", *Scientific Analysis of Entrepreneurship and SMEs (SCALES)*.
- Whitener, E. M. (2001) "Do "high commitment" human resource practices affect employee commitment?: A cross-level analysis using hierarchical linear modelling", *Journal of Management*, Vol 27, No 5, pp 515-535.
- Wood, S. and Menezes, L. D. (1998) "High commitment management in the UK: Evidence from the workplace industrial relations survey, and employers' manpower and skills practices survey", *Human Relations*, Vol 51, No 4, pp 485-515.
- YPulse (2021) "Why the great resignation is happening in Western Europe too", available at www.ypulse.com/article/2021/11/02/why-the-great-resignation-is-happening-in-western-europe-too

Transformational Leadership Fostering Open Innovation: A Dynamic Capabilities Perspective

Elona Cera¹ and Zuhair Abbas²

¹Management and Marketing Department, Faculty of Management and Economics, Tomas Bata University in Zlin, Czech Republic

²Business Administration Department, Faculty of Management and Economics, Tomas Bata University in Zlin, Czech Republic

e1cera@utb.cz (Corresponding author)

abbas@utb.cz

Abstract: Drawing upon dynamic capability theory, this research examines the role of transformational leadership in fostering open innovation in an emerging economy context in Southeastern Europe. Foremost, the study endeavours to tackle a noteworthy limitation, namely the nascent state of open innovation in the current body of literature pertaining to small and medium-sized enterprises (SMEs). Using a quantitative survey, we gathered information from 154 Albanian SMEs respondents. Data was analysed using PLS-SEM on the SmartPLS 4.0 version. The results show transformational leadership has a significant relationship with developmental culture and open innovation. In addition, we found that developmental culture mediates the relation between transformational leadership and open innovation. This research provides important practical implications for policymakers, leaders and industry practitioners to develop new business models for innovation diffusion. It requires shifting the focus from traditional innovation approaches towards new solutions to ensure collaboration and knowledge exchange. Existing researchers have highlighted transformational leadership with open innovation in the Western context. However, open innovation is less explored in Southeastern Europe specifically in SMEs which is an important context to unravel the useful insights. Significantly, open innovation became enabler of value creation, improved competitiveness and economic growth.

Keywords: Transformational leadership, Developmental culture, Open innovation, SMEs, Developing economy

1. Introduction

The concept of open innovation has emerged as a compelling area of interest within the field of innovation management science (Elmquist, Fredberg and Ollila, 2009). According to researchers (Chesbrough, 2010; Chesbrough and Bogers, 2014), innovation refers to the exchange of knowledge both internally and externally to enhance the competitiveness of a business. In the current business landscape, numerous organizations are required to adjust to the constantly evolving and dynamic external factors that deviate significantly from conventional methods of innovation (Dahlander and Gann, 2010). Therefore, successful transition from one innovation approach to another necessitates effective leadership that is receptive to an open innovation paradigm (Naqshbandi and Tabche, 2018; Naqshbandi, Tabche and Choudhary, 2019). Studies conducted in small and medium-sized enterprises (SMEs) have received limited attention, in contrast to the extensive research conducted in large multinational corporations (Usman et al., 2018). While smaller firms may not be as actively involved in open innovation (OI) as larger corporations, it is important to recognize their participation in external information acquisition (Spithoven, Vanhaverbeke and Roijakkers, 2013; Tsai *et al.*, 2022; Carrasco-Carvajal, Castillo-Vergara and García-Pérez-de-Lema, 2023). Thus, the significance of innovation in SMEs cannot be overstated, as it is critical to their growth. Consequently, the leadership of SMEs plays a vital role in ensuring their sustainability (Gad David *et al.*, 2021).

Different authors have paid attention to the influence of leadership in open innovation: such as empowering leadership (Naqshbandi and Tabche, 2018); transformational leadership (Gad David *et al.*, 2021) or knowledge oriented leadership (Naqshbandi and Jasimuddin, 2018). However, despite the well-established role of leadership in open innovation, research about SMEs operating in Southeastern Europe, in developing countries such as Albania, is scarce. Consequently, knowledge about the importance of leadership that influences open innovation in Albanian SMEs is largely unexplored. Chronologically considering the evolution of the term transformational leadership (TL), it has been variously described as a style of leadership that transcends traditional transactional leadership (Burns, 1978) as the process through which leaders inspire and motivate people through intellectual stimulation, personalized consideration, and idealized influence (Avolio, Waldman and Yammarino, 1991; Bass and Avolio, 1993) as a leadership form defined by a leader's capacity to inspire and motivate people by appealing to their higher-order needs and ideals (Yukl, 1999) and ultimately, as a behavioral model for leaders that encourage and inspire people to achieve exceptional performance through connecting with their underlying beliefs and values (Bass and Riggio, 2006). Accordingly, leaders defined as

transformational, as opposed to those defined as transactional, pay much more attention to the needs of their followers (Burns, 1978; Yukl, 1999; Bass and Riggio, 2006; Gad David *et al.*, 2021) to what motivates and inspires them towards appropriate action (Avolio, Waldman and Yammarino, 1991; Yukl, 1999) overlooking their personal goals in favor of collective values and attitudes shared in the framework of a “common agency” (Burns, 1978; Bass and Riggio, 2006; Gad David *et al.*, 2021), the expectations of which, followers are inclined to exceed (Burns, 1978). Intuitively, transformational leaders are expected to raise their followers' awareness, inspire new thinking, and foster personal growth and development (Yukl, 1999). Beginning with these considerations, the purpose of this study is to investigate the connection between a transformational leadership style and open innovation in SMEs that are operating in Albania.

Prior studies have examined the mediating mechanisms that explain the relationship between leadership and open innovation (Naqshbandi and Jasimuddin, 2018; Naqshbandi and Tabche, 2018; Gad David *et al.*, 2021). In this regard, Gad David *et al.*, (2021) stressed that conventional leadership not only promotes open innovation but also empowers an innovative culture, which when combined with the proper leadership, leads to open innovation. Notwithstanding their findings, the authors encourage forthcoming scholars to examine different aspects of innovative culture within the context of open innovation. Hence, we suggest that the developmental culture plays a mediating function in the association between transformational leadership and open innovation within small and medium-sized enterprises (SMEs). The culture in question is primarily oriented towards the external environment, with a particular emphasis on aspects such as “growth, resource acquisition, creativity, and adaptation” (Lau and Ngo, 1996). Therefore, it is contended that leaders bear the responsibility of promoting open innovation in SMEs through the cultivation of an appropriate culture and establishment of structures that facilitate the adoption of change and the augmentation of innovation acquisitions.

In a nutshell, the aim of this research is to enhance the understanding of the human aspect of open innovation by providing empirical evidence on the interconnections between transformational leadership, developmental culture, and open innovation in SMEs operating in Albania. Ongoing research endeavours to expand the existing body of knowledge in the domains of leadership, organizational culture, and open innovation within the context of SMEs functioning in a dynamic economic landscape. Comprehending these phenomena can aid SMEs in the selection and promotion of suitable leadership to attain their growth objectives, foster competitiveness, and ensure long-term sustainability.

2. Literature Review

Teece *et al.*, (1997) define dynamic capability as “the firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments.” Dynamic capability is recognized as a source of competitive advantage (Teece, Pisano and Shuen, 1997) in a dynamic and changing environment. Scholars Teece *et al.*, (1997) with the term “dynamic” refer to an organization's ability to update knowledge in order to adapt to the current business environment, which requires innovative approaches. The term “capabilities” emphasizes strategic management's crucial function in adequately adapting, absorbing, and reconfiguring resources to fulfill the demands of a changing environment. Thus, they emphasize that this is the best approach to match the needs of businesses concerning technological changes with a market orientation. Dynamic capabilities theory derives from the resource-based view theory. According to Bierly and Chakrabarti, (1996), the resource-based view emphasizes the importance of internal resources (i.e., human resource or leadership) and how they are used to generate different outcomes. Therefore, transformational leadership is widely acknowledged for its distinctive attributes, including “charisma, inspiration, and intellectual stimulation” (Nemanich and Vera, 2009). As a result, it is highly favored in dynamic environments that prioritize the advancement of both explorative and exploitative learning (i.e., open innovation) (Nemanich and Vera, 2009; Wamalwa, 2022).

Regarding the existing literature, leadership influences organizational culture (Naqshbandi, Tabche and Choudhary, 2019) and concomitantly enhances knowledge absorption and utilization determinants, thus fostering open innovation (Naqshbandi and Jasimuddin, 2018; Naqshbandi, Tabche and Choudhary, 2019). It is natural to assume that such a developmental culture also possesses the potential to foment open innovation. According to Naqshbandi *et al.*, (2015) collaborative organizational cultures, typified by cooperation, teamwork, and knowledge sharing across hierarchical boundaries, positively promote the implementation of open innovation. Companies with a collaborative culture are more likely to engage in external partnerships, actively seek external knowledge and ideas, and are more open to external influences, making open innovation

desirable and possible. Collaborative cultures have been variously described as developmental as well (Tuurnas *et al.*, 2019).

It contrasts other types of cultures, such as control-oriented cultures and adhocratic ones (Naqshbandi and Kamel, 2017; Naqshbandi, Tabche and Choudhary, 2019). E.g., control-oriented organizational cultures, defined by stringent hierarchies, inflexible procedures, and centralized decision-making, obstruct open innovation (Naqshbandi *et al.*, 2018). On the other hand, adhocratic cultures have a moderately beneficial impact on open innovation methods since they are characterized by flexibility, risk-taking, and entrepreneurial focus (Naqshbandi and Jasimuddin, 2018).

Companies with an adhocratic culture are more eager to experiment, explore new prospects, and engage in external collaborations, but their focus on innovation may be limited to certain projects or teams rather than being embraced throughout the firm. Nevertheless, as it has been reported that developmental cultures with a focus in external environment (Lau and Ngo, 1996) are the most conducive to innovation (C.-M. Lau and Ngo, 2004), we hypothesize that:

H1 – Developmental culture positively influence open innovation

In spite of definitional modifications dictated by the period in which transformational leadership has been described (Sarros, Cooper and Santora, 2008) some common patterns and themes emerge among definitions throughout the decades and are cross-shared by many authors. Thus, for the purpose of this study, our understanding is that transformational leaders establish a vision, set high standards, and offer support and encouragement to followers in order to help them reach their full potential. Notwithstanding, a definition of transformational leadership is incomplete if not adequately linked to its relationship with other components of organizational agency and structure (Yukl, 1999; Sarros, Cooper and Santora, 2008). According to numerous scholars, it is generally understood that, irrespective of causality (Bass & Riggio, 2006; Burns, 1978), there is a strong correlation between leadership style (LS) and organizational culture (OC) (Lok and Crawford, 2004; Bass and Riggio, 2006; Bowers, Hall and Srinivasan, 2017). Some of these scholars have explored OC's role in imposing a specific LS; whereas, concurrently, others have found that LS, especially in early-stage structures which are considerably more prone to developing OCs that resemble their first leaders' LSs and set of values (in similar fashion to the "founder effect" in biology), plays a major role in modelling OC (Bass and Avolio, 1993; Bass and Riggio, 2006; Schein, 2010; Metwally *et al.*, 2019). Another relevant facet explored by some researchers (Bass and Riggio, 2006; Metwally *et al.*, 2019; Gad David *et al.*, 2021) relates to the type of OC that is more inductive of a particular style of leadership. Drago-Severson and Blum-DeStefano, (2018) have found that cultures framed as developmental (DCs) are more conducive of transformational leadership styles. Moreover, Carmeli *et al.*, (2010) discovered that transformative leadership is positively associated to a culture of innovation and creativity, i.e., a developmental culture. This generates a culture that supports innovation, welcomes new ideas, and encourages lifelong learning (Bass and Riggio, 2006; Drago-Severson and Blum-DeStefano, 2018). According to Eisenbeiss *et al.*, (2008), through the above-mentioned mechanisms, transformational leaders cultivate deep bonds with their followers, promote open lines of communication, and involve staff in decision-making processes, which fosters a psychologically comfortable environment and stimulates knowledge sharing, teamwork, and cooperation. Pertaining to the above, the following hypothesis has been formulated:

H2 – Transformational leadership influence developmental culture

Multiple authors (C.-M. Lau and Ngo, 2004; Naqshbandi and Jasimuddin, 2018) have found the aforementioned set of properties to be not only descriptive of developmental cultures (Eisenbeiss, Van Knippenberg and Boerner, 2008), but also for such a culture to be indicative of open innovation (OI) (Naqshbandi, Kaur and Ma, 2015; Scaliza *et al.*, 2022). Therefore, a developmental culture encourages organizations to utilize mechanisms that are prolific of OI, such as knowledge exchange, knowledge management capacities, as well as knowledge-oriented leadership (Lau and Ngo, 2004). Moreover, within this "OI-enabled triad" (Naqshbandi, Kaur and Ma, 2015; Naqshbandi and Jasimuddin, 2018; Scaliza *et al.*, 2022) there are intricate interrelations which would require a separate paper to further investigate. What is relevant in our case is that knowledge-oriented leadership improves knowledge management capability. According to the above-cited research, leaders that prioritize knowledge acquisition, sharing, and utilization, create an environment conducive to knowledge management within their organizational structures. These leaders facilitate information exchange and give resources and assistance for knowledge-related initiatives. They are otherwise instrumental in directing transformational processes in organizations (Naqshbandi and Jasimuddin, 2018).

Additionally, knowledge management capability has a beneficial impact on open innovation (Eisenbeiss, Van Knippenberg and Boerner, 2008; Naqshbandi and Jasimuddin, 2018; Naqshbandi, Tabche and Choudhary, 2019; Scaliza *et al.*, 2022). Accordingly, several studies (Naqshbandi and Jasimuddin, 2018; Scaliza *et al.*, 2022) have found that organizations with improved knowledge management capability are more likely to engage in open innovation practices. Effective leadership practices help to build a strong knowledge management competence, which aids in the adoption of open innovation ideas and practices.

Therefore, the following hypothesis has been proposed:

H3 – Transformational leadership influence open innovation

Concerning existing studies it is compelling to affirm that transformational leadership has been shown to build a developmental culture within firms by inspiring and motivating followers to realize their maximum potential (Gad David *et al.*, 2021). Transformational leaders create an appealing vision, foster trust and cooperation, and empower their followers, nurturing an environment conducive to learning, creativity, and continuous development (Bass and Riggio, 2006; Bowers, Hall and Srinivasan, 2017; Naqshbandi, Tabche and Choudhary, 2019; Gad David *et al.*, 2021). Previous research has found that a developing culture is connected with open innovation. It promotes information exchange, collaboration, and the use of outside knowledge sources (Naqshbandi and Jasimuddin, 2018; Naqshbandi, Tabche and Choudhary, 2019). Organizations with a collaborative and developing culture are more likely to engage in open innovation techniques such external partnerships, seeking external knowledge and ideas, and being open to outside influences (Lau and Ngo, 2004; Lau and Ngo, 1996). Based on these findings, it is possible to hypothesize that a developmental culture serves as a bridge between transformational leadership and open innovation. In other words, the presence of a developmental culture within the firm mediates the favorable influence of transformational leadership on open innovation. Transformational leaders contribute to the development of a culture that promotes innovation practices through their leadership behaviors, which in turn helps the execution of open innovation initiatives. Transformational leadership promotes open innovation indirectly through its impact on company culture. Transformational leaders promote a developmental culture to foster innovation, knowledge sharing, and cooperation, which eventually improves the organization's ability to engage in innovation activities (Lau and Ngo, 2004). Henceforth, our final hypothesis assumes that:

H4 – Developmental culture mediates the relation between transformational leadership and open innovation

3. Methodology

3.1 Data and Sample

The current investigation utilized a quantitative methodology due to its capacity to deduce the traits, beliefs, and/or actions of a populace from a restricted sample size (Creswell and Creswell, 2017). The present study employs a methodology based on surveys to carry out the investigation. According to Saunders, M. *et al.*, (2009), the proposed research approach entails conducting comprehensive quantitative research and analyzing the interrelationships among various variables within a specific research framework. The study encompassed a cohort of 154 participants hailing from both the service and manufacturing industries. The minimum requirement specified by Bagozzi and Yi, (2012) was satisfied by the sample size in question. Current research employs data at the level of the firm to examine the correlation among different constructs. The study necessitates the inclusion of participants who hold the designation of owner or manager to ensure their possession of a comprehensive understanding of the organization's circumstances, as per the methodologies employed in prior research (Popa, Soto-Acosta and Martinez-Conesa, 2017). With regards to the demographic profile of the sample, it was found that 59% of the participants were categorized as owners, whereas the remaining 41% were identified as managers. Additionally, the investigation unveiled that 43% of the respondents were men, whereas 57% were women.

3.2 Variable Measurement

Transformational leadership. We used a 4-items measuring construct for transformational leadership, as adopted by García-Morales *et al.*, (2008)García-Morales, (2008), serving as the independent variable. A sample item is: TL1 - "The organization's management has a clear common view of its final aims and is able to transmit them and achieve the commitment of the rest of the organization's members". *Developmental Culture.* We used a 4-items construct for measuring developmental culture, as adopted by (Lau and Ngo, 2004) serving as the mediating variable. A sample item is "Our firm is a very dynamic and entrepreneurial place". Concerning data analysis, items: DC1 – "Our firm is a very dynamic and entrepreneurial place" and "DC2 - "The head of our

firm is generally considered to be an entrepreneur, an innovator, or a risk-taker” have been removed to increase construct consistency. *Open innovation*. We adapted an 11-item scale to measure the dependent variable derived from the work of Laursen and Salter, (2006). Participants were requested to assess the extent to which the company engaged in knowledge and information acquisition from external sources, including: “1) Consumers; 2) Dealers; 3) Competitors; 4) Consultants; 5) Universities and other research institutions; 6) Technology intermediary organizations; 7) Intellectual property organizations; 8) Venture capital enterprises; 9) Trade associations; 10) Relevant government departments”. However, for the purpose of enhancing construct consistency in the analysis of the data, item OI9 - "News media" was excluded.

4. Results

A difference of roughly 31% was found using the Harman single-factor analysis, removing the risk of a bias caused by using a standard procedure. In addition, VIF values are all less than 3 in Table 1, so collinearity is not a major concern here (Diamantopoulos and Siguaw, 2006).

Table 1: Measurement Model

Constructs	Indicator		Factor Loadings	VIF	Rho_A	CR	CA
Transformational Leadership (TL)					0.921	0.940	0.915
	TL1		0.882	2.531			
	TL2		0.897	2.953			
	TL3		0.927	2.557			
	TL4		0.864	2.729			
DC					0.811	0.913	0.808
	DC3		0.922	1.853			
	DC4		0.910	1.855			
Open Innovation (OI)					0.901	0.911	0.894
	OI1		0.694	1.914			
	OI2		0.739	2.385			
	OI4		0.670	1.545			
	OI5		0.675	2.387			
	OI6		0.775	2.519			
	OI7		0.736	2.662			
	OI8		0.791	2.581			
	OI9		0.618	1.906			
	OI10		0.748	2.565			
	OI11		0.663	2.094			
Note: VIF=Variance Inflation Factor, Rho_A=, CR=, CA=							

Source: Authors' own

As per (Henseler et al., 2015), The ratio of Heterotrait to Monotrait (HTMT) also showed that discriminant validity (HTMT) was true. Table 3 demonstrates that all HTMT ratios were within the 0.85 threshold.

Table 2: Discriminant Validity Fornell-Larcker Criterion

	DC	OI	TL
DC	0.916		
OI	0.385	0.713	
TL	0.470	0.422	0.893

Source: Authors' own

Table 3: Discriminant Validity Heterotrait-Monotrait ratio (HTMT)

	DC	OI	TL
DC			
OI	0.423		
TL	0.544	0.431	

Source: Authors' own

The bootstrapping method (5,000 subsamples, one-tailed significance) was used to find out how important the measure was. As Hypothesis H1, DC ($O = 0.239$, $t = 2.261$, $p = 0.012$) was strongly associated with open innovation (OI). Furthermore, results showed that there is a significant connection between transformational leadership and development culture ($O=0.470$, $t=5.823$, $p=0.000$), lending credence to H2. $O=0.310$, $t=2.931$, $p=0.002$ also supports H3 that TL is associated favourably with open innovation.

Mediation Analysis

Table 4 shows that an interaction analysis was done to prove hypothesis H4. The results revealed that H4 (developmental culture) moderated the connection between transformational leadership and open innovation ($O=0.112$, $t=1.997$, $p=0.023$). The predictability of research variables was determined by calculating the coefficient of determination (R^2) of the regression model (see Table.5). This coefficient provides an assessment of the likelihood that an independent variable can account for a certain amount of variance in the value of the dependent variable. Open Innovation (R^2) as a dependent variable in the model explains just 22% of the overall variation in open innovation, which can be thought about for the effects of separating variables on revolutionary leadership as a whole. However, 22% is shown by the mediation construct in developmental culture (0.221).

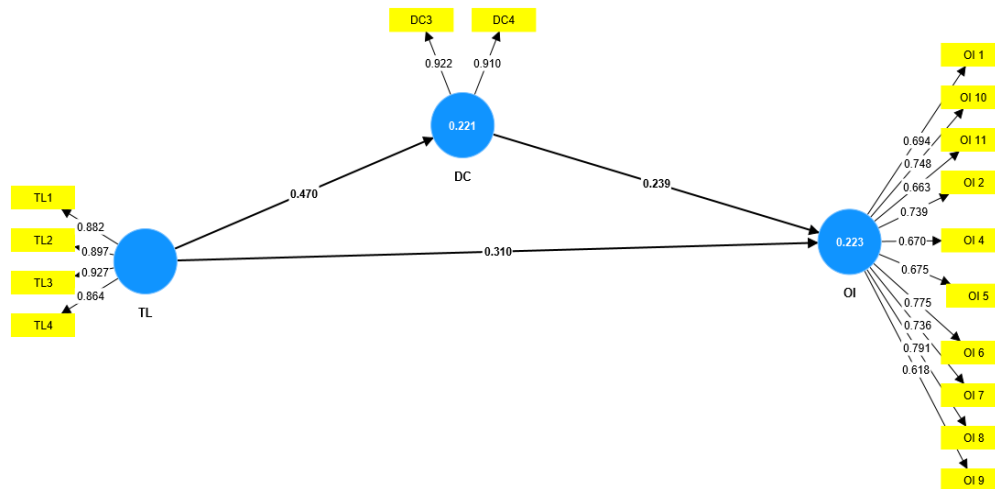
Table 4: Results of hypotheses testing (direct and indirect effect)

Relationship	Original Sample (O)	Sample Mean (M)	STDEV	t-value	p-value	Decision
Direct Effect						
H1: DC ---->OI	0.239	0.249	0.106	2.261	0.012	Supported
H2: TL ---->DC	0.470	0.474	0.081	5.823	0.000	Supported
H3: TL ----> OI	0.310	0.317	0.106	2.931	0.002	Supported
Indirect Effect (Mediation Analysis)						
H4: TL --->DC --->OI	0.112	0.119	0.056	1.997	0.023	Supported
Construct	Coefficient of determination (R^2)		Adjusted R^2			
DC	0.221		0.215			
OI	0.223		0.210			

Table 5: Model Fit

	Saturated Model	Estimated Model
SRMR	0.088	0.088
d_ ULS	1.054	1.054
d_ G	0.439	0.439
Chi_square	322.177	322.177
NFI	0.748	0.748

Source: Authors' own



5. Discussions and Implications

In this study, a comprehensive model was tested to analyse the role of transformational leadership in open innovation through the mediating mechanism of developmental culture in SMEs. The first hypothesis of this study predicted a positive association between developmental culture and open innovation (*H1*). The results are similar to other studies that prove the influence of developmental culture in product innovation (Lau & Ngo, 2004) and innovation climate in open innovation (Gad David *et al.*, 2021). This study also shows a positive association between TL and DC (*H2*), TL and OI (*H3*). Hence, SMEs that are led by transformational leaders are able to achieve their innovative strategies that involve the sourcing of knowledge resources from the external market. Overall, this confirms previous research findings that posit the significance of leadership in the context of open innovation outcomes and the acquisition of external knowledge for innovation purposes (Naqshbandi and Jasimuddin, 2018; Naqshbandi, Tabche and Choudhary, 2019). The final outcome of this research suggests that there exists a mediating function of DC in the relationship between TL and OI (*H4*). The findings indicate that the association is mediated by the developmental culture. The present discovery aligns with the anticipated outcome that transformational leaders facilitate a workplace culture that encourages open communication channels and staff participation in decision-making procedures. This approach cultivates a psychologically conducive atmosphere that stimulates knowledge exchange, teamwork, and collaboration among employees.

The present research is aimed at practitioners who are involved in the operations of SMEs and aspire to attain their innovation objectives. The study particularly focuses on developing countries where leadership plays a crucial role in promoting growth and progress. A comprehensive understanding of the function of TL in developmental culture and OI enhancement can equip entrepreneurs with knowledge to ascertain a suitable leadership approach to attain the intended growth and expansion of organizational objectives.

6. Conclusions and Future Directions

Drawing from DCT, our research investigated the impact of transformational leadership in open innovation under the mediating effects of developmental culture considering data gathered from a total of 154 SMEs located in Albania. The findings have practical implications as they offer valuable insights to managers and leaders of SMEs in Albania regarding the implementation of growth-oriented strategies through an open innovation approach.

Similar to other research endeavours, the current study has certain limitations that could be addressed in future investigations. The utilization of a cross-sectional design in this study may give rise to the possibility of temporal changes in the fundamental causal relationship. Furthermore, it is advisable that further investigations strive to augment their sample size to ameliorate the calibre of their data outputs and amplify the applicability of their findings. In addition, it is possible to contemplate alternative forms of leadership, such as relational leadership, and explore its potential impact on open innovation.

Acknowledgement

This work is funded under FaME TBU No. IGA/FaME/2023/012 "Closed and open innovation: role of human resource, servant leadership, digitalisation, and uncertainty."

References

- Avolio, B.J., Waldman, D.A. and Yammarino, F.J. (1991) 'Leading in the 1990s: The Four I's of Transformational Leadership', *Journal of European Industrial Training*, 15(4). Available at: <https://doi.org/10.1108/03090599110143366>.
- Bagozzi, R.P. and Yi, Y. (2012) 'Specification, evaluation, and interpretation of structural equation models', *Journal of the Academy of Marketing Science*, 40(1), pp. 8–34. Available at: <https://doi.org/10.1007/s11747-011-0278-x>.
- Bass, B.M. and Avolio, B.J. (1993) 'Transformational Leadership and Organizational Culture', *Public Administration Quarterly*, 17(1), pp. 112–121.
- Bass, B.M. and Riggio, R.E. (2006) *Transformational Leadership*. Psychology Press.
- Bierly, P. and Chakrabarti, A. (1996) 'Generic knowledge strategies in the US pharmaceutical industry', *Strategic management journal*, 17(S2), pp. 123–135.
- Bowers, M.R., Hall, J.R. and Srinivasan, M.M. (2017) 'Organizational culture and leadership style: The missing combination for selecting the right leader for effective crisis management', *Business horizons*, 60(4), pp. 551–563.
- Burns, J.M. (1978) *Leadership*. Harper & Row.
- Carmeli, A., Reiter-Palmon, R. and Ziv, E. (2010) 'Inclusive Leadership and Employee Involvement in Creative Tasks in the Workplace: The Mediating Role of Psychological Safety', *Creativity Research Journal*, 22(3), pp. 250–260. Available at: <https://doi.org/10.1080/10400419.2010.504654>.
- Carrasco-Carvajal, O., Castillo-Vergara, M. and García-Pérez-de-Lema, D. (2023) 'Measuring open innovation in SMEs: an overview of current research', *Review of Managerial Science*, 17(2), pp. 397–442.
- Chesbrough, H. (2010) 'Business model innovation: opportunities and barriers', *Long range planning*, 43(2–3), pp. 354–363.
- Chesbrough, H. and Bogers, M. (2014) 'Explicating Open Innovation: Clarifying an Emerging Paradigm for Understanding Innovation'. Rochester, NY. Available at: <https://papers.ssrn.com/abstract=2427233> (Accessed: 27 February 2023).
- Creswell, J.W. and Creswell, J.D. (2017) *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Dahlander, L. and Gann, D.M. (2010) 'How open is innovation?', *Research policy*, 39(6), pp. 699–709.
- Diamantopoulos, A. and Siguaw, J.A. (2006) 'Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration', *British journal of management*, 17(4), pp. 263–282.
- Drago-Severson, E. and Blum-DeStefano, J. (2018) 'Building a developmental culture of feedback', *Journal of Professional Capital and Community*, 3(2), pp. 62–78. Available at: <https://doi.org/10.1108/JPC-06-2017-0016>.
- Eisenbeiss, S.A., Van Knippenberg, D. and Boerner, S. (2008) 'Transformational leadership and team innovation: integrating team climate principles', *Journal of applied psychology*, 93(6), p. 1438.
- Elmquist, M., Fredberg, T. and Ollila, S. (2009) 'Exploring the field of open innovation', *European Journal of Innovation Management*, 12(3), pp. 326–345.
- Gad David, K. et al. (2021) 'Effect of transformational leadership on open innovation through innovation culture: exploring the moderating role of absorptive capacity', *Technology Analysis & Strategic Management*, pp. 1–16.
- García-Morales, V.J., Matías-Reche, F. and Hurtado-Torres, N. (2008) 'Influence of transformational leadership on organizational innovation and performance depending on the level of organizational learning in the pharmaceutical sector', *Journal of organizational change management*, 21(2), pp. 188–212.
- Lau, C.-M. and Ngo, H.-Y. (1996) 'One country many cultures: Organizational cultures of firms of different country origins', *International Business Review*, 5(5), pp. 469–486.
- Lau, C.-M. and Ngo, H.-Y. (2004) 'The HR system, organizational culture, and product innovation', *International business review*, 13(6), pp. 685–703.
- Laursen, K. and Salter, A. (2006) 'Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms', *Strategic management journal*, 27(2), pp. 131–150.
- Lok, P. and Crawford, J. (2004) 'The effect of organisational culture and leadership style on job satisfaction and organisational commitment: A cross-national comparison', *Journal of Management Development*, 23(4), pp. 321–338. Available at: <https://doi.org/10.1108/02621710410529785>.
- Metwally, D. et al. (2019) 'How Ethical Leadership Shapes Employees' Readiness to Change: The Mediating Role of an Organizational Culture of Effectiveness', *Frontiers in Psychology*, 10. Available at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02493> (Accessed: 22 June 2023).
- Naqshbandi, M.M. and Jasimuddin, S.M. (2018) 'Knowledge-oriented leadership and open innovation: Role of knowledge management capability in France-based multinationals', *International Business Review*, 27(3), pp. 701–713.
- Naqshbandi, M.M. and Kamel, Y. (2017) 'Intervening role of realized absorptive capacity in organizational culture–open innovation relationship: Evidence from an emerging market', *Journal of General Management*, 42(3), pp. 5–20.
- Naqshbandi, M.M., Kaur, S. and Ma, P. (2015) 'What organizational culture types enable and retard open innovation?', *Quality & Quantity*, 49(5), pp. 2123–2144. Available at: <https://doi.org/10.1007/s11135-014-0097-5>.
- Naqshbandi, M.M. and Tabche, I. (2018) 'The interplay of leadership, absorptive capacity, and organizational learning culture in open innovation: Testing a moderated mediation model', *Technological Forecasting and Social Change*, 133, pp. 156–167.
- Naqshbandi, M.M., Tabche, I. and Choudhary, N. (2019) 'Managing open innovation: The roles of empowering leadership and employee involvement climate', *Management Decision*, 57(3), pp. 703–723.
- Nemanich, L.A. and Vera, D. (2009) 'Transformational leadership and ambidexterity in the context of an acquisition', *The Leadership Quarterly*, 20(1), pp. 19–33.

- Popa, S., Soto-Acosta, P. and Martinez-Conesa, I. (2017) 'Antecedents, moderators, and outcomes of innovation climate and open innovation: An empirical study in SMEs', *Technological Forecasting and Social Change*, 118, pp. 134–142.
- Sarros, J.C., Cooper, B.K. and Santora, J.C. (2008) 'Building a Climate for Innovation Through Transformational Leadership and Organizational Culture', *Journal of Leadership & Organizational Studies*, 15(2), pp. 145–158. Available at: <https://doi.org/10.1177/1548051808324100>.
- Saunders, M., Philip L., and Adrian Th. (2009) *Research methods for business students*. Pearson education.
- Scaliza, J.A.A. et al. (2022) 'Relationships among organizational culture, open innovation, innovative ecosystems, and performance of firms: Evidence from an emerging economy context', *Journal of Business Research*, 140, pp. 264–279. Available at: <https://doi.org/10.1016/j.jbusres.2021.10.065>.
- Schein, E.H. (2010) *Organizational Culture and Leadership*. John Wiley & Sons.
- Spithoven, A., Vanhaverbeke, W. and Roijakkers, N. (2013) 'Open innovation practices in SMEs and large enterprises', *Small business economics*, 41, pp. 537–562.
- Teece, D.J., Pisano, G. and Shuen, A. (1997) 'Dynamic capabilities and strategic management', *Strategic management journal*, 18(7), pp. 509–533.
- Tsai, F.-S. et al. (2022) 'Open innovation and SME performance: The roles of reverse knowledge sharing and stakeholder relationships', *Journal of Business Research*, 148, pp. 433–443.
- Tuurnas, S. et al. (2019) 'Towards collaborative development culture in local government organisations', *International Journal of Public Sector Management*, 32(6), pp. 582–599. Available at: <https://doi.org/10.1108/IJPSM-05-2018-0119>.
- Wamalwa, L.S. (2022) 'Transactional and Transformational Leadership Styles, Sensing, Seizing, and Configuration Dynamic Capabilities in Kenyan Firms', *Journal of African Business*, pp. 1–23.
- Yukl, G. (1999) 'An evaluation of conceptual weaknesses in transformational and charismatic leadership theories', *The Leadership Quarterly*, 10(2), pp. 285–305. Available at: [https://doi.org/10.1016/S1048-9843\(99\)00013-2](https://doi.org/10.1016/S1048-9843(99)00013-2).

Factors Influencing the Human Talent Recruitment Process in Private Companies: A Systematic Review

Cinthya Liliana Chalco-Chávez¹, Gisela Analy Fernandez-Hurtado¹ and Franklin Cordova-Buiza^{2,3}

¹Business Faculty, Universidad Privada del Norte, Lima, Peru

²Research, Innovation and Social Responsibility Department, Universidad Privada del Norte, Lima, Peru

³Faculty of Business Sciences, Universidad Continental, Huancayo, Peru

N00179935@upn.edu.pe

gisela.fernandez@upn.edu.pe

franklin.cordova@upn.edu.pe

Abstract: Over time, organizations have made important changes with respect to the perspectives of human capital management, going from being a resource that is easy to replace to a resource with a sustainable vision in the company. Changing situations and technological advances have allowed organizations to give due importance to human participation, since it is a resource that, through its activities, makes the achievement of objectives possible. Therefore, organizations consider that the recruitment process must go through more demanding filters where the productive factors possessed by human talent are reliably captured. The present review has been submitted to databases such as: Dialnet, Redalyc, Scielo and Scopus, obtaining 25 articles, Redalyc had a greater contribution with 48% and the countries with greater implication for the study were Ecuador and Peru with 24%, the methodological design with greater use in the literatures was quantitative with 48% and the most used instrument was the questionnaire with 52%. Likewise, to detail the search procedure, the PRISMA 2020 diagram was used, and from a total of 3411 articles, a total of 2857 was excluded between non-retrieved and ineligible reports, arriving later under a final filter to a total of 25 articles. In conclusion, the results showed that the most influential factors in the recruitment process were education; where relevance is given to knowledge and professional and specialized training for effective decision making around their functions; on the other hand, work experience that links the technical and practical aspect of the collaborator who seeks efficiency in the processes; finally, the psychological traits that reflect the emotional balance and management of pressure situations and soft skills that affect productivity and performance. This research contributes to future researchers to identify the most used parameters in human recruitment processes for success and consistency in business decision making.

Key words: Human talent, Human capital, Recruitment

1. Introduction

Since ancient times human beings have had the need to work and adapt to society, from their subconscious they analyzed the skills in which they excelled and thus selected the tasks to be performed. Nowadays, every responsible organization has the obligation to consider the human resources department as an essential element for the development and determination of success. Barrios et al. (2019), states that human resources management appears with the purpose of organizing the efficiency of human capital to provide satisfaction and value generation. Alcívar et al. (2020), explains that the most important factor in the management of an organization is human capital, since it is the principle of fruitful knowledge. Therefore, it is considered that organizations should take into account factors that help to classify their processes so that the personnel hired is the most suitable. Aguilera et al. (2019), the recruitment process helps to make information filters regarding the different qualitative skills of each person which benefits the organization to raise and opt for key decisions in its operations.

1.1 Relevant Considerations in the Recruitment Proces

As time goes by, organizations become more demanding and especially when it comes to such an important resource as human participation, where the recruited must comply with essential factors within their qualities. In view of this, there are multiple positions that analyze the appropriate profile for the position to be filled, in relation to what is stated by Pardo et al. (2014), indicates that personality traits are determining factors to be selected in a recruitment process. Alonso et al. (2015), points out that the information provided in the resume is the instrument where you must specify particular data of the person, academic training, experience in the work environment. Then the development in educational training influences the increase of productivity, that is why emphasis is made on the focus on continuous trainings for the collaborators of the organizations (Flores, 2016; La Torre-Torres et al., 2022; Salazar-Rebaza et al., 2022).

Bendezú (2020), adds that, the participation of human talent is a profitable resource because it possesses of a diversified set on skills such as experience, intelligence and information. Therefore, the recruiter must know and understand the necessary characteristics of the position to be filled. To contribute on the information Cordero et al. (2019) explains that, at the time of making the selection of personnel during the interview stage it is paramount to make filters through tests on the understanding of the position to occupy, Aguilera et al. (2019), highlights the value of the experience in the position to occupy that the candidate must possess to be chosen. During the search for a job and the work environment everything is of interest to organizations from the way of dressing to the work experience, before that scenario, Mena et al. (2019) observes that, labor capabilities are produced by different characteristics such as physical attributes, skills, intellect. To add, García et al. (2016) explains that, the knowledge of human capital is the main factor that gives the valuation of organizations and this allows the market to consider competitive organizations. Checa et al. (2020), highlights that training and work experience contribute to the growth of a competent professional.

Then it can be concluded that the recruiter will have to be meticulous in observing these particular characteristics in the recruitment process since his main objective will be the productive growth of the organizations (Campuzano et al., 2016; Cordova-Buiza et al., 2022; Barro-Chale et al., 2022). For further support Mayoral et al. (2014) explains about the considerable factors in the retention of human capital where it should be deepened about the candidate's academic background and career experience. To conclude Arrieta (2022), points out that, in candidate retention, aspects of preparation and skills should be considered and candidates who do not have the skills should be discarded.

1.2 National and Global Realities in the Recruitment Process

Regarding the study at the national level, according to Chaparro et al. (2014), points out that the tool of technology has not benefited the staff of organizations, so Peru is positioned in third place among Latin American countries, with a large percentage of dissatisfaction of the recruitment processes of human talent. Therefore, emphasis is placed on the main function that a recruiter must perform, since it depends on the result, organizations will obtain greater development and growth.

On the other hand, at the global level, Moreira et al. (2013) states, human talent scotches for 12 years, which achieved a significant impact in the period from 2007 to 2019 with a percentage of 45%. The analysis projects the disinterest in performing a rigorous recruitment process of the candidate's qualities. Finally, the motive behind the present work on the influential factors in the recruitment process is to provide private organizations with the opportunity for self-analysis and improvement of the filters they use to select human capital.

In view of the research, the question is: ¿What are the factors that influence the process of recruiting human talent in private companies? A systematic review between the years 2012 - 2022. Given the argument of the above, it is concluded that the purpose of this study is to identify the factors involved in the process of recruiting human talent in private companies.

2. Methodology

The present research study is based on the method of information compilation known as empirical literature search, which has as a concept the inquiry in bibliographic reference databases such as; Dialnet, Redalyc, Scielo, Scopus, Ebsco. Likewise, another form of truthful search is through types of search engines such as Google Scholar, Scirus, Micrisoft Academic search, Google books. which fulfill the same purpose of inquiry on truthful scientific articles, for further support. Martínez (2021) explains that, the methodology is an element of scientific analysis and the way in which a learning is developed for the collection of acquiring new cognitions, which facilitate and grant knowledge value.

The present study shows a search of consolidated tools which are carried out in a truthful way and certified scientific information in a way that reinforces the researcher's knowledge. For the development and corroboration of this research work, the following databases were used: Redalyc, Dialnet, Scielo, Scopus, which were filtered by years, countries, sectors, languages for the search of articles with a greater relation, where a total of 25 scientific articles were obtained.

Figure 1 shows the Prisma diagram with the databases and the articles found, the application of systematization until the articles included in the study were selected. For the selection of articles, the following search strategies were used. It starts with the method of keywords such as; "Human talent", "strategic management", "human resource", "recruitment and selection", "competencies", "recruitment" also some phrases and connectors such

as; "and", "or", in "management and human talent", "human resource or human talent", "factors and human talent", "personnel selection", "process and recruitment of human talent".

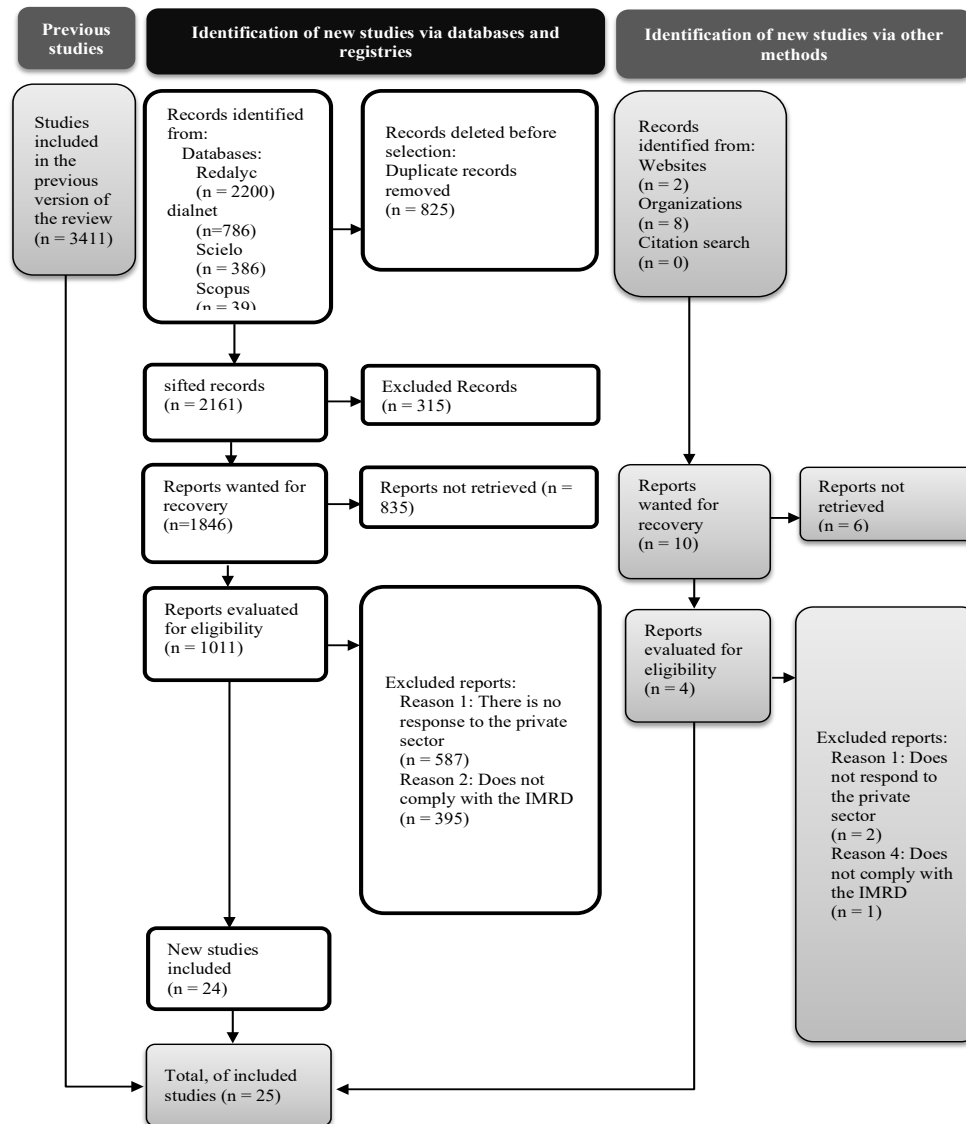


Figure 1: PRISMA 2020 – Flow Diagram

The search, filtering and selection of scientific articles provides the systematization of scientific articles on the proposed topic, the PRISMA 2020 flowchart allows to achieve the objective of a review of scientific articles.

3. Results and Discussion

The results of the systematic review are presented in relation to databases, years of publication, scientific journals, methodological approaches and types of studies. The articles correspond to the databases of Redalyc, Dialnet, SciELO and Scopus that met the necessary filters to be considered scientific articles, some of the characteristics of determination are that they have articles within the established years, in the range of the years 2012 to 2022 and the structure containing introduction, methodology, Results and Discussion. In addition, the articles present relationship with the topic under study for the research.

According to figure 2 the collection in the database is composed of a total of 25 articles that make up 100% of the findings, the lowest percentage with (4%) corresponds to Scopus and with (8%) of participation in the SciELO database, likewise (38%) corresponds to the Dialnet database, finally Redalyc has (48%) of scientific research articles making it the database with the greatest contribution for this systematic review.

Figure 3 shows the percentage amount of the years involved in the articles, with the highest percentage rates in the investigation being 2020 with a percentage amount of 20%, having had an amount of five articles involved.

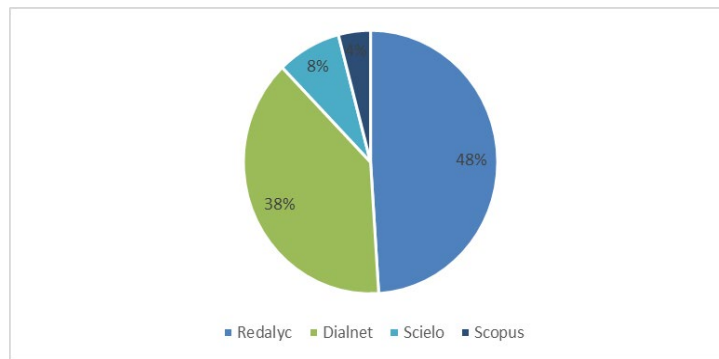


Figure 2: Selected Database

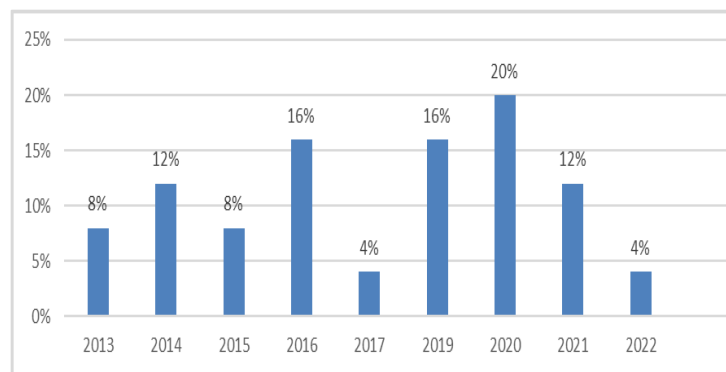


Figure 3: Years considered in the articles

Figure 4 shows the percentages of each journal within the subject of the study, although it is true that there is a great variety of journals involved in the systematic review, which helps the study to obtain a greater variety of opinions from different authors. The journals that obtained the highest rate of involvement were the industrial data journal that publishes original works, edited by the faculty of industrial engineering of the San Marcos University, which is considered the most important Peruvian institution in Peru, the technological information journal with original articles in the field of science edited by the technological information center of La Serena, Chile, the Vadian research journal provides true articles edited by the Hermilio Valdizan National University of Huanuco, Peru, all with a percentage of 8%.

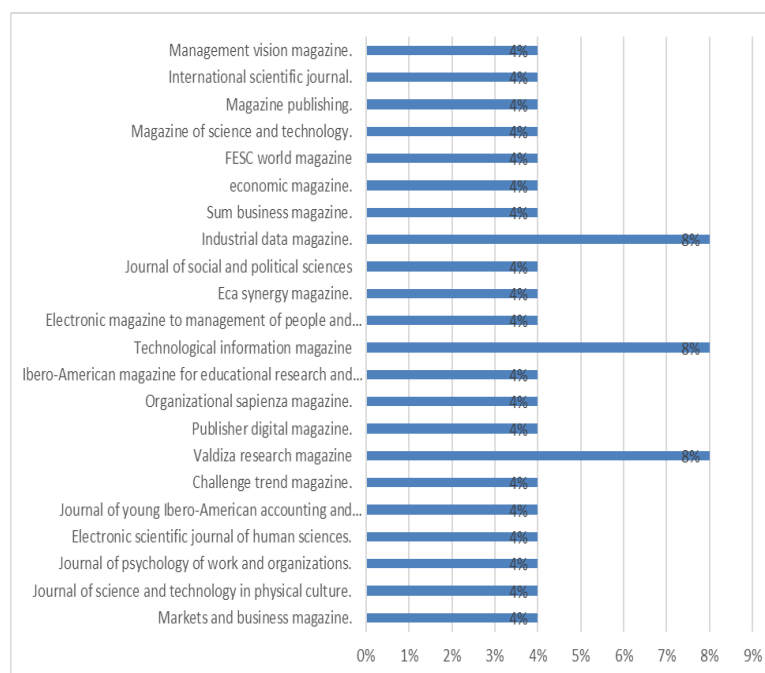


Figure 4: Name of the journals considered

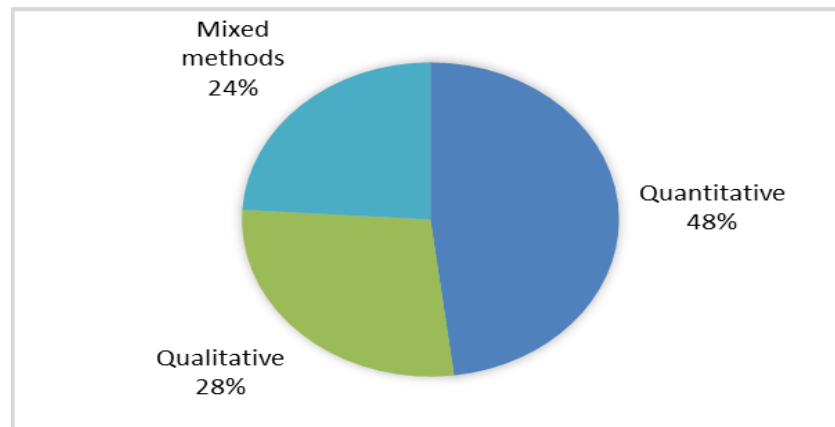


Figure 5: Methodological approaches

According to figure 5 the methodological approaches found in the studies have made it possible to identify the paths followed by the authors in order to gather information on their object or subject of study. The results show that 48% follow a quantitative approach, using statistical and numerical instruments for their research; 28% use a qualitative analysis; and finally, 24% of the research has made use of a mixed approach.

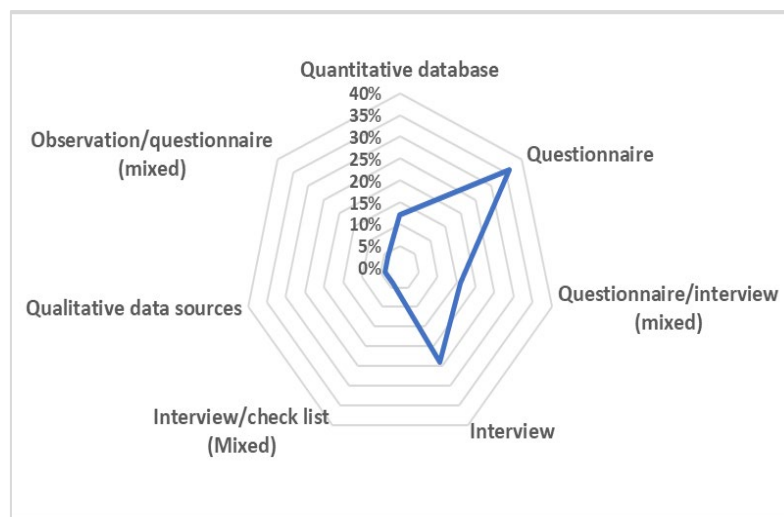


Figure 6: Methodological research tools

As can be seen in the figure 6, there is an important use of a quantitative approach to the study using the questionnaire as the main tool (36%), followed by a qualitative approach, using interviews (24%) and finally a mixed approach involving questionnaires and interviews (16%).

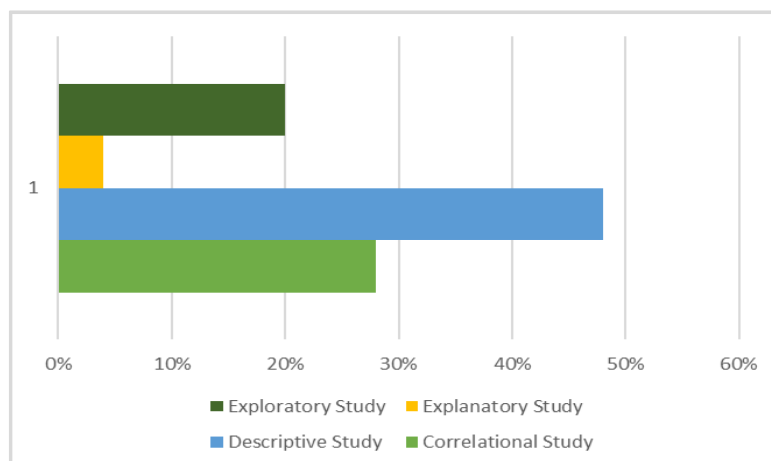


Figure 7: Types of studies

Finally, the most predominant studies are descriptive studies with 48% participation, followed by correlational studies with 28%; such research has allowed enriching this review with diverse academic approaches.

Private companies have shown great interest in the way recruitment processes are carried out because it is a fundamental pillar to continue perfecting the same philosophy and internal work operation. The work rhythm is considered an expression that directly involves the collaborators of an organization; because, it would not be possible to talk about productivity or moments of success if the elements that make up a company are not in line with its objectives; therefore, the need to create, propose and establish guidelines that guide the recruitment processes has been latent (Flores, 2016; Rodríguez and Murillo, 2016; Checa et al., 2020)

According to Jaimes et al. (2015), industrial companies have decided to give great importance to factors that involve professional competitiveness and periodic training, allowing processes to be increasingly modern in order to simplify actions; on the other hand, as mentioned Calle (2021), companies in the field have shown great interest in the exceptional capabilities of individuals who are committed to innovation, impetuous individuals with high adaptability.

When studying the competencies to be considered in candidates applying for job positions, intrinsic capabilities oriented to verbal skills, conflict management and interpersonal relations are qualities of great importance in these processes; likewise, certain researches subscribe that organizations include in their requirements communication skills that allow channeling the company's philosophy and business objectives for greater growth (Marquez, 2012; Alcívar et al., 2020; Alonso et al., 2015; Mayoral and Rezrazi, 2014).

There are researches that show certain contrasts in the results, the first one shows a focus on competencies, where the balance and emotional management in the collaborators are vital to solve conflict environments or situations of pressure and adaptability in the work environment; however, the second approach shows that companies are mostly looking for skills acquired from experience and knowledge; being these who provide the necessary tools to achieve high standards of productivity (Campuzano et al., 2016; Mayoral and Razrazi, 2014; Arrieta, 2022).

On the other hand, for companies it is a priority to maintain objective levels of recruitment when selecting people who fit the profile they are looking for, the existence of evaluation tools that unite objective factors of analysis, such as: time of experience, levels of specialization, degrees of study, among others; as well as subjective factors such as: values and principles, management of emotions and soft skills, is already a permanent policy because it facilitates the process (Martínez, 2021; Amez, 2022; Muños et al., 2020; Ramirez et al., 2019).

When mentioning the diversity of factors taken into account in the recruitment processes, it should be considered that not all processes should follow the same parameters or indicators; this is due to the fact that the requirements according to the positions are unique and in many occasions they should (Bernal and Vargas, 2017; Pardo and Díaz, 2014). According to Ramirez et al. (2019), there are certain factors in which operational or manual skills are mandatory to be considered for an appropriate performance in the position; but there are also other realities in which these skills can be complementary; all this will depend directly on the profile of the position that organizations are looking for.

4. Conclusions

The research paper has as a tool the empirical literature search, which contributes of great importance to the study conducted since it allows analyzing truthful and scientific information from different years, countries and studies, so that the research can be supported by the opinions of veteran authors, thus strengthening the prior knowledge of the researchers.

The methodology analysis is the means to channel and guide the research in a way that gives veracity on the finding of selected items, as well as this employed by approaches and tools that help the analysis of the research. The quantitative approach is a data collection on numerical and statistical measurement to establish accuracy in the study and the qualitative approach aims at in-depth analysis of human actions, these elements contribute significantly to the results of the research study.

The first limitation was the difficulty in finding articles related to the variable. The second limitation was the search for articles that complied with the methodology structure (Introduction, Methodology, Results and Discussion or conclusion), so many articles were discarded for the research.

Finally, when knowing the importance of the influential factors, similarities were found in the opinions of the authors, so that it gives greater veracity and reliability to the research, where the recruitment process because

it allows to analyze the different options of human capital that meet the requested profile of the position to occupy, qualifying their skills and abilities such as; academic training, experience in the position to occupy, psychological traits in relation to the function of the position.

Some of the recommendations for research is to analyze a global analysis that includes not only private organizations, but also to investigate the variable in public organizations in order to have more access to updated scientific articles. In relation to the selected articles, an analysis of the techniques of the instruments should be carried out in order to better understand and enrich the knowledge about a methodology in a complete manner, as well as to provide an accurate research study. Likewise, it is recommended that a study of the sectors involved in the scientific articles be carried out in order to provide more detailed information so that researchers can identify in which sector the variable is most involved and the sectors consider their recruitment processes to be more demanding so that there is an expansion of their influencing factors in the recruitment process.

References

- Aguilera, G., Nahuat, J. and Badillo, O. (2019) "Reclutamiento y selección por competencias: empresas familiares del estado de Coahuila", *Revista Mercados y Negocios*, Vol. 1, No. 40, pp. 63-77.
- Ames, R. (2022) "Factores de atracción y retención del talento humano y su influencia en el compromiso organizacional", *Revistas económicas*, Vol 43, No. 2, pp. 139-152.
- Alcívar, M., Alarcón, C., and Ferrin, H. (2020) "Talento humano y la gestión del conocimiento en las microempresas", *Pódium*, Vol. 1, No. 37, pp.71-88.
- Alonso, P., Moscos, S. and Cuadrado, D. (2015) "Procedimientos de selección de personal en pequeñas y medianas empresas españolas", *Revista de Psicología del Trabajo y de las Organizaciones*, Vol 31, No. 2, pp. 79-89.
- Arrieta, K. (2022) "Estrategias para la gestión del talento humano en una empresa privada", *Revista Científica Electrónica de Ciencias Humanas*, No. 52, pp. 37-49.
- Barrios, K., Olivero E. and Figueroa, B. (2020) "Condiciones de la gestión del talento humano que favorecen el desarrollo de capacidades dinámicas", *Revista Información Tecnológica*, Vol. 31, No. 2, pp.55-62.
- Barro-Chale, A., Rivera-Castañeda, P., Ramos-Cavero, M. J. and Cordova-Buiza, F. (2023) "Agricultural associations and fair trade in the peruvian rainforest: A socioeconomic and ecological analysis", *Environmental Economics*, Vol 14, No 1, pp 24-35.
- Bendezú, K (2020) "Gestión del talento humano y la satisfacción laboral de los trabajadores de una institución educativa privada", *Investigación valdizana*, Vol. 14, No. 1, pp. 22-28.
- Bernal, E. and Vargas, J. (2017) "Cultura organizacional basada en la gestión del talento humano como factor de permanencia de las pymes en zacatecas", *Revista de la Agrupación Joven Iberoamericana de Contabilidad y Administración de Empresas*, No. 16, pp. 109-126.
- Calle, M. (2021) "La motivación del talento humano y su relación con la atención al ciudadano en un gobierno local de Lima, Perú, 2017, *Industrial industrial Data*, Vol 24, No. 2, pp. 217-247.
- Campuzano, M., Ziadet, E. and Echaverria, G. (2016) "Gestión del talento humanos en las PYMES", *Revista Publicando*, Vol 3, No. 7, pp. 438-448.
- Chaparro, M. and Urra, M. (2014) "Competencias específicas del trabajador social en la gestión del talento humano", *Revista Tendencia Retos*, Vol 19, No. 2, pp. 27-44.
- Checa, L., Cabrera, X. and Chavarry P. (2020) "Estrategia de gestión del talento humano para mejorar el desempeño laboral en una entidad bancaria", *Revista Investigación Valdizana*, Vol. 14, No 4, pp. 188-197.
- Cordero, J., Narváez, C. and Erazo, J. (2019) "La evaluación por competencias: una herramienta para determinar la productividad del talento humano", *Revista Digital Publisher*, Vol 4, No 3, pp. 76-104.
- Cordova-Buiza, F., Aguirre-Parra, P., García-Jimenez, M. G. and Martinez-Torres, D. C. (2022) "Virtual leadership as a development opportunity in business context", *Problems and Perspectives in Management*, Vol 20, No. 2, pp 248-259.
- Flores, J. (2016) "Estrategias para mejorar el proceso de reclutamiento y selección de personal en la dirección de teleinformática de la gobernación del estado Mérida", *Revista Sapienza Organizacional*, Vol 3, No. 5, pp. 79-102.
- García, P., Gatica, M., Cruz, E., Luis, K., Vargas, R., Hernández, J., Ramos, V. and Macías, D. (2016) "Procesos de reclutamiento y las redes sociales", *Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, Vol 6, No. 12, pp. 60-76.
- Jaimes, S., Marquez J. and Pernía, P. (2015) "Factores psicosociales que influyen en el comportamiento laboral de acuerdo con los procesos de Gestión Administrativa y del Talento Humano que presentan los empleados de la empresa Distraves S.A de Cúcuta", *Revista Mundo FESC*, Vol 5, No. 9, pp. 64-68.
- Marquez, J. (2013) "Desarrollo de las organizaciones complejas bajo una perspectiva sinérgica del talento humano", *Revista Visión Gerencial*, Vol 1, No. 2, pp.273-290.
- Martínez, C. (2021) "Las metodologías aplicadas en los artículos científicos de las ciencias bibliotecaria y de la información, y big data", *Bibliotecas Anales de Investigación*, Vol 17, No. 2, pp. 121-138.
- Matute, K. and Borjorquchasi, R. (2021) "Apoyo a los subsistemas de talento humano, selección y reclutamiento a partir de un sistema experto. Caso de estudio", *Revista de ciencias y tecnología*, Vol 1, No. 26, pp. 41-48.

- Mayoral, G. and Rezrazi, A. (2014) "Gestión de personas: resultados de investigación", *Revista Gestión de las Personas y Tecnología*, Vol 7, No. 21 pp. 18-31.
- Mena, A., Freire, J., Sinaluisa, M. and Santillan, D. (2019) "Modelo de gestión del talento humano por competencias en la planta de pintura de vehículos CIAUTO, ubicada en Ambato, Ecuador", *Industrial industrial Data*, Vol 22, No. 2, pp. 139-147.
- Moreira, J. and Llor, M. (2013) "The selection of talent on human skills approach", *Revista ECA Sinergia*, Vol. 4, No. 1, pp. 82-88.
- Muñoz, H., Vargas, J. and Chavez E. (2020) "Gestión del talento humano y productividad en el Ferrocarril Central Andino S.A. de Lima-Perú", *Revista científica Internacional*, Vol 7, No. 2, pp. 175-198.
- La Torre-Torres, M. T., Pando-Medina, Z. M., Aragon-Ortega, P. M. and Cordova-Buiza, F. (2022) "Administrative management and work performance in hardware and construction SMEs: The case of justiniano soto villanueva S.R.L., Peru", *IBIMA Business Review*, 2022.
- Pardo, C. and Diaz, O. (2014) "Desarrollo del talento humano como factor clave para el desarrollo organizacional, una visión desde los líderes de gestión humana en empresas de Bogotá D.C.", *Revista Suma de Negocios*, Vol 5, No. 11, pp. 39-48.
- Ramírez, I., Espinola, C., Ruiz, I. and Huguet, M. (2019) "Gestión del talento humano: análisis desde el enfoque estratégico", *Revista Información Tecnología*, Vol 30, No. 6, pp. 167-176.
- Rodríguez, M. and Murillo, S. (2016) "Talento humano en la microempresa informal", *Revista ciencias sociales y políticas*, Vol 2, No. 2, pp. 247-256.
- Salazar-Rebaza, C., Zegarra-Alva, M. and Cordova-Buiza, F. (2022) "Management and leadership in university education: Approaches and perspectives", *Problems and Perspectives in Management*, Vol 20, No.3, pp 130-141.

Attitudes of Managers Towards Ethical Programs in Slovakia

Simona Činčalová

College of Polytechnics Jihlava, Czech Republic

simona.cincalova@vspj.cz

Abstract: In the modern world, ethical programs have high importance regarding the ethical behavior of companies. Developing and maintaining the corporate ethical culture and reputation is the responsibility of top managers. The current paper aims to reveal the main characteristics of employees influencing their attitude towards selected elements of the ethical program that are considered the most suitable for supporting the ethical behavior of managers, as well as to identify the components of the ethical program with less impact on ethical behavior of managers. The study applied the questionnaire survey method for quantitative data collection in the selected Slovak company. The results show that a code of ethics is an essential part of an ethical program and is crucial for companies. Moreover, although employees' attitudes towards selected elements regarding ethical behavior are positive, only the attitude to employee care is dependent on the position of respondents in the company. We concluded about employees considering training, employee care, conflict of interest monitoring and transparency in stakeholder relations as the most influential components of the ethical program.

Keywords: Ethical programs, Managers, Employees, Slovakia

1. Introduction

Ethical aspects play an important role in managerial decisions, as top managers in particular are responsible for developing and maintaining the company's ethical culture and reputation (Jones, 1995; Trevino & Nelson, 2016). Behavior of companies with respect to moral issues is as important as the individual morale of individual employees (Jones, 1995). The way ethical standards are created and communicated is based on important decisions made by managers to develop an ethical culture. Negative results and externalities associated with corporate scandals in recent decades, e.g. Trevino & Nelson (2016); Maak (2007), emphasized the importance of the ethics of managerial decision-making as a signal of responsible management in companies. Enderle (1987) addressed the issue of "managerial ethical leadership", formulating and emphasizing ethical principles that should provide fundamental assistance to responsible leadership, but which can never replace personal responsibility in decision-making. The benefits of moral enterprise include greater employee loyalty and dedication (Jones, 1995), better transparency in relationships with current and potential business partners (Godfrey et al., 2009), and lower capital costs (Cheng et al., 2014). Ethical behavior of managers is shaped and influenced by a large number of factors. At the organizational level, ethical programs (EPs) play an important role in this regard (Kaptein, 2010; Majluf & Navarrete, 2011; Schwartz, 2013). In the available literature it is possible to meet with important foreign studies dealing with the theory of EP and ethical corporate culture, e.g. Captain (2009, 2015), Beerli et al. (2013), Verbos et al. (2007), Weaver et al. (1999a), Weber & Fortun (2005). Other authors, e.g. Trevino et al. (2003, 2008); Waver & Trevin (1999); Weaver et al. (2005) consider in their studies a managerial commitment to ethics as an influential predictor of the EP's overall success.

The main goal of our research is to reveal the elements of the ethical program (EP) that are perceived by the employees of the selected company as the most suitable for supporting the ethical behavior of managers, and to identify components of the EP with less impact on ethical behavior of managers. We also see the contribution of research in the extension of the existing theory of EP set in the new context of the energy industry in the Slovak Republic, in the implementation and analysis of the current state of EP in a selected company.

2. Theoretical Background

Trevino et al. (2003) state that moral managers use leadership tools, such as rewards, communication, and discipline, with an emphasis on adhering to set standards according to the standards of codes of ethics when conducting management. According to Bláha and Dytrt (2003), it is now necessary for managers to constantly monitor the development of economics and management and thus be able to apply their knowledge in practice. Schoeman (2014) argues that managerial ethics is about making and managing people in terms of what is right and wrong in relation to other people, that is, all stakeholders in business. The author defines the term managerial ethics mainly relations between people in the workplace. It is essential in companies to adhere to established informal and formal rules, and great emphasis is placed on managers, who must be a role model for their subordinates. Individual rules should be observed and respected in all managerial positions (Kaptein, 2010; Majluf & Navarrete, 2011; Schwartz, 2013). Trevino et al. (2008) argued that there is a set of ethically based management practices that can help managers run companies efficiently and be competitive. The author also defines that managerial ethics is a part of business ethics, while it is also a professional ethics that respects moral

principles, norms, values in the position of a manager and evaluates his behavior when performing managerial functions from an ethical point of view. Based on the research, the authors Dytrt et al. (2011) describes managerial ethics as a way of leading people, which is based on humane behavior, respect for human dignity and responsible behavior.

If a code of ethics is established in the company, the behavior of managers and other employees should be governed by it (Beeri et al., 2013). Adherence to ethics and the code of ethics is a necessity in every managerial position. They are expected to adhere to the principles of good and loyal behavior among employees, subordinates, superiors and also with the general public. If the company wants to be prosperous at the same time and at the same time do business in accordance with ethical principles, then it is necessary to base its business on organized mutual relations between company owners, employees and top management (Brožík, 2007).

Brown and Trevino (2015) came to the conclusion that the support and development of ethical behavior of employees, whether managers or subordinates, can be realized in the form of hiring young employees. They further concluded that these employees must have a strong ethical role model. Kofman (2010) argues that if employees do not feel intellectual, spiritual but also physical satisfaction, the company can get into unwanted and serious problems. Kaptein (2010) says that from the point of view of managerial ethics, it is necessary for all stakeholders to participate together in the development of the company, while managers and managers have an irreplaceable function in achieving positive results. Within the country and the state, such a concept was lacking, and so the initiative was taken over by private business entities and they began to develop managerial ethics (Remišová et al., 2019).

Research by Smith et al. (2020) demonstrates that ethical behavior and decision-making in many cases outweigh the need for success. This phenomenon is also related to the fact that in recent years, more and more emphasis has been placed on the ethical aspects of employee behavior in the company. Sroka & Szántó (2018) argue that ethical behavior can bring significant benefits to the company and its business, for example, the company can gain more customers through ethical behavior, reduce turnover in the company or attract investors and thus maintain a high share price.

In their study, Sitanala et al. (2019) also explain the fact that codes of ethics can only influence managers' decisions if they are familiar with their content and objectives. Payne et al. (2019) argues that the implementation of a code of ethics without its written commitment to it is ineffective. Thomas (2017) conducted research on the impact of codes of ethics on ethical behavior and confirmed theories regarding the existence of codes of ethics. Research has confirmed that it is not enough for codes of ethics to be developed, but that proper implementation is also needed. Dytrt (2006) argues that the individual principles of the code of ethics must be observed by all employees of a given company, regardless of their functional position.

Currently, a number of companies around the world are implementing codified rules of conduct in the context of the ethical program, which Kaptein (2015) characterizes as a formal, organizational control system that serves to eliminate unethical behavior in the company. By creating and implementing an EP, the company has a long-term commitment to certain standards of behavior and values. Majluf & Navarrete (2011) defined the EP as a way for companies to implement their principles of ethical behavior in terms of basic principles and values, strategies, company policy, as well as in terms of precisely defined standards and rules. Ethical programs provide support to guide employees in solving problems in accordance with ethical principles and provide guidelines for ethical business (Beeri et al., 2013). Kaptein (2015) draws attention to the diversity of the individual components of the EP. According to him, a key element of the EP is a code of ethics, which is why it is important that it be created already in the first phase of EP creation. This idea is also supported by Merchant (2017), who in his article is of the opinion that the Code of Ethics is an integral part of the ethical program. The success of the EP depends on adapting to the context of the environment in which it is embedded (Hogenbirk et al., 2021). Kaptein (2010) considers the EP to be an important factor in the organizational level of a company, which plays an important role in influencing the behavior of managers and employees in the field of ethical behavior.

According to Stansbury & Barry (2007), ethical programs that rely on controls and other enforcement measures can reduce employees' ability to address ethical issues. According to Gosovic (2020), the purpose of the EP in the company is to direct employees to certain ways of behaving and to ensure that they make decisions in accordance with ethical rules. According to Majluf & Navarrete (2011), the implementation of ethical programs is important for their function of reducing unethical behavior of employees at all levels of the company. Hogenbirk et al. (2021) explains that the function of an ethics program cannot be just a plan to change employee

behavior, but the EP must also include ways in which the company will move forward to change the behavior of both managers and employees.

According to Trevino & Nelson (2016), one of the most complicated parts of the EP is measuring the effectiveness of the EP, because ethical programs do not lead directly to savings or increased economic results, but contribute to these positive changes. According to the authors Pelletier & Bligh (2006), the importance of ethical programs is most effectively determined by conducting a questionnaire survey among the employees of the company in which the ethical programs were implemented.

3. Methodology and Data

The article presents an analysis of the elements of the ethical program and their impact on managerial ethics in the selected Slovak company - which components of the EP are perceived as valuable and useful for shaping managerial ethical behavior in the selected company (through a different gender and a work position). The research was carried out through established research questions and on the basis of established hypotheses. Through appropriately selected questions in the questionnaire survey, we obtained the necessary data from a selected sample of respondents. Based on the analysis of the obtained data and the evaluation of hypotheses, we drew conclusions and managerial recommendations resulting from our research activities.

The basis for the creation of research questions is the paradigm of the ethical program and its impact on the ethical behavior of managers in the selected company.

Research question no. 1:

What is the impact of the code of ethics on shaping the ethical behavior of managers?

The chosen research question deals with the issue of the code of ethics and its influence on the ethical behavior of managers. This question contributes to the main goal of the article. As already mentioned in the theoretical part of the work, the code of ethics is considered to be the main element of the EP and for this reason we deal with this specific element in our research.

Research question no. 2:

What is the interconnectedness of the investigated EP components?

Using this research question, we analyze the interconnectedness of EP elements, their impact on the formation and perception of managerial behavior. Hypotheses were established for selected elements of the EP, which we subsequently subjected to statistical analysis. Statistical methods such as Pearson's chi-square test and Z-score were applied to determine statistically significant differences between selected groups of respondents according to selected criteria. Through the selected research question and statistical evaluation of hypotheses, we will find out which components of the EP are perceived as valuable and useful for the formation of managerial ethical behavior in the selected company.

Research question no. 3:

Does ethical training contribute to a higher perception of EP components among the employees of the selected company?

This question aims to analyze the importance of ethical training in the selected company and their impact on supporting the ethical behavior of managers, but also other employees. We also use this question to identify whether the company's employees consider ethical training to be an appropriate tool to support the implementation of the EP in practice.

In order to be able to use statistical evaluation to accurately interpret selected research results, we will also use hypotheses in the work. These hypotheses are based on selected research questions, which we want to clarify using defined statistical methods. The hypotheses have the same basis, but a different field of research, i. j. one statement can be examined from several perspectives.

In the presented research, the empirical data necessary for the fulfillment of the selected goal were collected in a quantitative form through a questionnaire survey. The reason for using this form is mainly the rapid distribution and ensuring the anonymity of respondents. In particular, the last reason was an important element that ensured a relatively high return and the involvement of a large number of employees of the selected company in completing the questionnaire. The use of a quantitative research method also allowed us to work with a larger research sample.

The questionnaire was compiled in the form of scale, closed questions in electronic form and contained a total of 22 questions. The answers to the questions were largely expressed on a 5-point Likert scale. For the most part, the questionnaire contained questions conceived in the form of expressing consent ("strongly agree", "agree", "disagree", "disagree" and "strongly disagree") using the Liker scale. In selected cases, the questions were conceived as selective with predefined answers. The questionnaire was sent to all employees of the selected company via email. To determine statistically significant differences between selected groups of respondents according to selected criteria, statistical methods such as Pearson's chi-square test and Z-score were applied and were performed using SPSS Statistics, at the significance level $\alpha = 0.05$.

4. Results

In connection with the objectives of the work, an electronic questionnaire survey was conducted, which was attended by 118 respondents, of which 75 were women and 43 men, through different positions. It was a 42% return on the total number of employees of the selected company. 64% of women and 36% of men took part in the research.

Within the research, we selected 2 of the 9 elements of the ethical program (the most important (P1 to P2)), which were then subjected to statistical analysis:

P1: Ethical and communication training.

P2: Conflict of interest monitoring and anti-corruption policy of the company.

The following hypotheses were defined for element P1 (ethical and communication trainings):

H1a: There are statistically significant differences in the attitudes of employees to the element of the ethical program P1 depending on the education achieved.

H1b: There are statistically significant differences in the attitudes of employees to the element of the ethical program P1 depending on the position that the respondent holds in the company.

H1c: There are statistically significant differences in the attitudes of employees to the element of the ethical program P1 depending on the length of employment in the company.

The following hypotheses were defined for element P2 (conflict of interest monitoring and anti-corruption policy of the company):

H2a: There are statistically significant differences in the attitudes of employees to the element of the ethical program P2 depending on the education achieved.

H2b: There are statistically significant differences in the attitudes of employees to the element of the P3 ethics program depending on the position that the respondent holds in the company.

H2c: There are statistically significant differences in the attitudes of employees to the element of the ethical program P3 depending on the length of employment in the company.

Element of ethics program P1: Ethical and communication training

Table 1: Structure of answers to hypothesis H1a

	High school [47]		University 1 st level [12]		University 2 nd and 3 rd level [59]		Z-score		Z-score p-value
	No.	%	No.	%	No.	%			
Very suitable + quite suitable	46	97,87	11	91,67	57	96,61	HS/U1	-0,5096	0,6101
I don't take a stand	1	2,13	1	8,33	2	3,39	HS/U23	0,3893	0,6965
Relatively inappropriate + very inappropriate	0	0,00	0	0,00	0	0,00			
χ ²	1,1241		α = 0.05 HS – high school				U1 – university 1 st level		
χ ² p-value	0.5701						U23 – university 2 nd and 3 rd level		

Table 2: Structure of answers to hypothesis H1b

	Manager [24]		Administrative worker [44]		Trader / seller [29]		Analyst [21]		Z-score		Z-score p-value
	No.	%	No.	%	No.	%	No.	%			
Very suitable + quite suitable	23	95,83	43	97,73	28	96,55	20	95,24	M/AW	-0,4417	0,6599
I don't take a stand	1	4,17	1	2,27	1	3,45	1	4,76	M/TS	-0,1366	0,8887
Relatively inappropriate + very inappropriate	0	0,00	0	0,00	0	0,00	0	0,00	M/AN	0,0967	0,9203
χ^2	0,3329		M - manager AW – admin. worker				AN - analyst $\alpha = 0.05$				
χ^2 p-value	0,9537		TS – trader / seller								

Table 3: Structure of answers to hypothesis H1c

	Up to 1 year [8]		1-3 years [25]		3-5 years [26]		> 5 years [59]		Z-score		Z-score p-value
	No.	%	No.	%	No.	%	No.	%			
Very suitable + quite suitable	7	87,50	24	96,00	25	96,15	58	98,31	Y1/Y2	-0,8770	0,3789
I don't take a stand	1	12,50	1	4,00	1	3,85	1	1,69	Y1/Y3	-0,9097	0,3628
Relatively inappropriate + very inappropriate	0	0,00	0	0,00	0	0,00	0	0,00	Y1/Y4	-1,6853	0,0910
χ^2	2,5899		Y1 – up to 1 year Y2 – 1-3 years				Y4 – more than 5 years $\alpha = 0.05$				
χ^2 p-value	0,4593		Y3 – 3-5 years								

By evaluating the examined element of the EP using descriptive statistics, we found that almost all respondents evaluated the element of "ethical and communication training" as a positive tool of the EP to support managerial ethics. Only a minimal amount, 3.39% of respondents were unable to assess their opinion. Based on these data, we can argue that training focused on communication and ethics is perceived as appropriate to support the ethical behavior of employees in the company.

The statistical calculations for hypothesis H1a show that there are no statistically significant differences in the attitudes of employees to the element "Ethical and communication training" depending on the education achieved. This means that respondents divided by education have the same approach, resp. preference for this element to support the ethical behavior of managers. Therefore, we reject hypothesis H1a, because there are no statistically significant differences in the attitudes of employees to ethical and communication training in relation to the achieved education.

Examining the aspect of position (hypothesis H1b), we found that there are no statistically significant differences in the attitudes of employees to the element "Ethical and communication training" depending on the position held in the company. This means that respondents who were divided according to position have the same approach - perception of the suitability of this element to support managerial ethics in the company. Therefore, we reject the H1b hypothesis because there are no statistically significant differences in the attitudes of employees to ethical and communication training depending on the position they hold in the selected company.

From the results of the examination of the aspect of the length of employment (hypothesis H1c), we did not find significant statistical deviations in different attitudes according to the duration of employment in the company.

Therefore, we also reject the H1c hypothesis. There are no statistically significant differences in the attitudes of employees to ethical and communication training in relation to the period of operation in the company.

Element of ethical program P2: Conflict of interest monitoring and anti-corruption policy of the company

Structure of answers to hypothesis H2a

	High school [47]		University 1 st level [12]		University 2 nd and 3 rd level [59]		Z-score		Z-score p-value
	No.	%	No.	%	No.	%			
Very suitable + quite suitable	43	91,49	11	91,67	53	89,83	HS/U1	-0,0197	0,9840
I don't take a stand	1	2,13	1	8,33	6	10,17	HS/U23	0,2903	0,7718
Relatively inappropriate + very inappropriate	3	6,38	0	0,00	0	0,00			
χ ²	0,1006		α = 0.05 HS – high school				U1 – university 1 st level		
χ ² p-value	0,9509						U23 – university 2 nd and 3 rd level		

Structure of answers to hypothesis H2b

	Manager [24]		Administrative worker [44]		Trader / seller [29]		Analyst [21]		Z-score		Z-score p-value
	No.	%	No.	%	No.	%	No.	%			
Very suitable + quite suitable	23	95,83	38	86,36	26	89,66	20	95,24	M/AW	1,2280	0,2187
I don't take a stand	1	4,17	4	9,09	3	10,34	0	0,00	M/TS	0,38476	0,3953
Relatively inappropriate + very inappropriate	0	0,00	2	4,55	0	0,00	1	4,76	M/AN	0,0967	0,9203
χ2	2,2760		M - manager AW – admin. worker				AN - analyst α = 0.05				
χ2 p-value	0,5171		TS – trader / seller								

Structure of answers to hypothesis H2c

	Up to 1 year [8]		1-3 years [25]		3-5 years [26]		> 5 years [59]		Z-score		Z-score p-value
	No.	%	No.	%	No.	%	No.	%			
Very suitable + quite suitable	7	87,50	20	80,00	19	73,08	50	84,75	Y1/Y2	0,2403	0,8103
I don't take a stand	0	0,00	4	16,00	4	15,38	4	6,78	Y1/Y3	-0,0738	0,9442
Relatively inappropriate + very inappropriate	1	12,50	1	4,00	3	11,54	5	8,47	Y1/Y4	-0,8307	0,4065
χ^2	2,8188		Y1 – up to 1 year Y2 – 1-3 years			Y4 – more than 5 years $\alpha = 0.05$					
χ^2 p-value	0.4204		Y3 – 3-5 years								

With a basic view of the EP element "conflict of interest monitoring and anti-corruption policy", only 6.8% of respondents could not assess how they perceive this element in terms of the support component for managerial ethics. At the same time, only 2.5% of respondents consider it an inappropriate element. More than 90% of respondents had a positive attitude towards this element in the research and think that the selected element is a suitable tool to support the ethical behavior of managers in society.

We found that the monitoring of conflicts of interest and the company's anti-corruption policy are perceived by the company's employees as a very suitable element of an ethical program to support the ethical behavior of managers. Only 2.54% of respondents rated this element as inappropriate. From the point of view of the structure of respondents, these were respondents with lower educational attainment. However, in the context of educational attainment, there are no statistically significant differences in respondents' answers. We therefore reject hypothesis H2a.

From the point of view of the position that the respondents hold in the selected company, we did not find that any of the positions had a significantly different relationship to the P2 element. We found the lowest number of positive perceptions among administrative staff. We reject the H2b hypothesis because there are no statistically significant deviations in the context of the position on the P2 element.

Even in the case of differentiation according to the length of employment in the company, there are no statistically significant differences between individual groups. Element P2 was given the greatest importance by employees who worked in the selected company for more than 5 years and it was almost 95% of respondents. We reject the H2c hypothesis.

5. Discussion

When asked whether ethical training contributes to a higher perception of elements of the ethical program among the company's employees, as many as 88% of respondents answered in the affirmative. Based on the above, we can conclude that the research has shown that ethical training contributes to a higher perception of EP components among the employees of the selected company. Our findings are also confirmed by the conclusions of Valentine et al. (2011), who consider ethical training as the primary method for harmonizing employee behavior with ethical principles. Jones (2009) sees ethical training as the most direct means of informing and influencing the behavior of employees and managers. Brown & Treviño (2015) and Treviño et al. (2008) argue, however, that there is little evidence of the impact of ethical training and that its effectiveness cannot be clearly confirmed. Based on the results, the most suitable element of the ethical program for the support of managerial ethics according to the employees of the selected company were moral principles and decent behavior (98%), which were followed by other elements. These included ethical and communication training (97%), transparency between stakeholders (95%), conflict of interest monitoring and anti-corruption policy (91%), anti-discrimination elements (89%), doing business in accordance with environmental protection (84%), employee care (81%). Only seventh of the nine elements were sanctions for unethical behavior (78%) and the adoption of the ISO 14 001 environmental management system (65%). For the purposes of the article, only selected most important elements, selected according to the authors of the article, were statistically evaluated.

Conflict of interest monitoring and the company's anti-corruption policy were considered by employees to be an appropriate element of the EP. We did not find that some of the examined criteria were different from others, where we could confirm that a given group of employees prefers or does not prefer a selected element more than another group of employees. This finding is also valid for the last statistically examined element, which was transparency in relations between stakeholders. These elements are suitable for supporting managerial ethics according to all employees without distinction. According to Gluchman (2008), these elements are the basis of trust in business relationships, in which managers apply the principles of the code of ethics uncompromisingly. In general, we can say that the best perceived elements do not show a significant preference for the selected group of employees. This means that these elements are equally perceived by all employees at different levels of the organizational structure of the selected company.

6. Conclusions

We examined the ethical behavior of employees (managers) and its impact in the selected Slovak company using a questionnaire. The aim of the research was to reveal the elements of the ethical program that are perceived by the employees of the selected company as the most suitable for supporting the ethical behavior of managers and to identify the components of the ethical program with less impact on ethical behavior of managers. We managed to fulfill this goal, both by identifying the theoretical basis associated with the researched issues and

basic concepts on the selected topic (managerial ethics, code of ethics, ethical program, etc.) and by conducting research focused on managerial ethics in the selected company.

In the theoretical basis of our research, we found that the existence of a code of ethics as an element of the EP is extremely important for companies, as it defines certain "standards" of employee behavior in the workplace. Codes of ethics are also an important part of ethical programs, which also include other areas, resp. components related to the ethical conduct of employees. These include, for example, accountability policy, monitoring and audit, incentive policy or reporting on ethical behavior.

In the empirical part of the research, we found that employees rank among the most influential components of the EP to support managerial ethics elements of ethical and communication training, employee care, conflict of interest monitoring (including company anti-corruption policy) and transparency in stakeholder relations. The employees of the selected company included sanctions for unethical behavior and the adoption of the ISO 14 001 environmental management system as the components of the EP with the least impact on ethical behavior.

The importance of this research also lies in pointing out the importance of the EP's existence in private companies. The work also points to the possibility of strengthening information and general overview of employees about the EP and managerial ethics.

References

- Beeri, I., Dayan, R., Vigoda-Gadot, E., and Werner, S. B. (2013). Advancing ethics in public organizations: The impact of an ethics program on employees' perceptions and behaviors in a regional council. *Journal of business ethics*, Vol 112, No. 1, pp 59-78.
- Bláha, J., and Dytrt, Z. (2003). *Manažerská etika*. Management Press.
- Brown, M. E., and Trevino, L. K. (2014). Do role models matter? An investigation of role modeling as an antecedent of perceived ethical leadership. *Journal of Business Ethics*, Vol 122, No. 4, pp 587-598.
- Brožík, V. (2007). *Hodnotové orientácie*. Univerzita Konštantína Filozofa.
- Dytrt, Z. (2006). *Dobré jméno firmy*. Alfa Publishing.
- Dytrt, Z., Bobák, R., Diessl, J., Gregar, A., Málek, O., Příbyl, M., and Stříteská, M. (2011). *Manažerská etika v otázkách a odpovědích*. Computer Press, as.
- Enderle, G. (1987). Some perspectives of managerial ethical leadership. *Journal of Business Ethics*, Vol 6, No. 8, pp 657-663.
- Gluchman, V. (2008). *Úvod do etiky*. Tribun EU.
- Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic management journal*, Vol 30, No. 4, pp 425-445.
- Gosovic, A. K. (2020). *Ethics as Practice: An Ethnographic Study of Business Ethics in a Multinational Biopharmaceutical Company*. Copenhagen Business School.
- Hogenbirk, S., and Van Dun, D. H. (2021). Innovative ethics officers as drivers of effective ethics programs: An empirical study in the Netherlands. *Business Ethics: A European Review*, Vol 30, No. 1, pp 76-89.
- Cheng, B., Ioannou, I., and Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic management journal*, Vol 35, No. 1, pp 1-23.
- Jones, D. A. (2009). A novel approach to business ethics training: Improving moral reasoning in just a few weeks. *Journal of Business Ethics*, Vol 88, No. 2, pp 367-379.
- Jones, T. M. (1995). Instrumental Stakeholder Theory: A Synthesis of Ethics and Economics in *The Academy of Management Review* Vol 20, No. 2, pp 404-473.
- Kaptein, M. (2009). Ethics programs and ethical culture: A next step in unraveling their multi-faceted relationship. *Journal of Business Ethics*, Vol 89, No. 2, pp 261-281.
- Kaptein, M. (2010). The ethics of organizations: A longitudinal study of the US working population. *Journal of Business Ethics*, Vol 92, No. 4, pp 601-618.
- Kaptein, M. (2015). The effectiveness of ethics programs: The role of scope, composition, and sequence. *Journal of Business Ethics*, Vol 132, No. 2, pp 415-431.
- Kofman, F. (2010). *Vědomý business: integrita, úspěch a štěstí*. Portál.
- Maak, T. (2007) Responsible Leadership, Stakeholder Engagement and the Emergence of Social Capital. *Journal of Business Ethics*, Vol 74, pp 329-343.
- Majluf, N. S., and Navarrete, C. M. (2011). A two-component compliance and ethics program model: An empirical application to Chilean corporations. *Journal of Business Ethics*, Vol 100, No. 4, pp 567-579.
- Majtán, M. (2009). *Manažment*. Sprint dva.
- Merchant, K. A., and White, L. F. (2017). Linking the Ethics and Management Control Literatures☆. In *Advances in Management Accounting*. Emerald Publishing Limited.
- Payne, D. M., Corey, C., Raiborn, C., and Zingoni, M. (2019). An applied code of ethics model for decision-making in the accounting profession. *Management Research Review*.

- Pelletier, K. L., and Bligh, M. C. (2006). Rebounding from corruption: Perceptions of ethics program effectiveness in a public sector organization. *Journal of Business Ethics*, Vol 67, No. 4, pp 359-374.
- Remišová, A., Lašáková, A., and Kirchmayer, Z. (2019). Influence of formal ethics program components on managerial ethical behavior. *Journal of Business Ethics*, Vol 160, No. 1, pp 151-166.
- Schoeman, C. (2014). *Ethics can: Managing workplace ethics*. Knowres Publishing.
- Schwartz, M. S. (2013). Developing and sustaining an ethical corporate culture: The core elements. *Business Horizons*, Vol 56, No. 1, pp 39-50.
- Sitanala, T. F. (2019). Superior Authority and Fraudulent in Procurement of Goods/services: the Role of Code of Ethics. *Jurnal Tata Kelola dan Akuntabilitas Keuangan Negara*, Vol 5, No. 2, pp 139-155.
- Smith, E., Williams-Jones, B., Master, Z., Larivière, V., Sugimoto, C. R., Paul-Hus, A., and Resnik, D. B. (2019). Researchers' perceptions of ethical authorship distribution in collaborative research teams. *Science and engineering ethics*, pp 1-28.
- Sroka, W., and Szántó, R. (2018). Corporate social responsibility and business ethics in controversial sectors: Analysis of research results. *Journal of Entrepreneurship, Management and Innovation*, Vol 14, No. 3, pp 111-126.
- Stansbury, J., and Barry, B. (2007). Ethics managements and the paradox of control. *Business Ethics Quarterly*, Vol 17, No. 2, pp 239-261.
- Thomas, S. O. (2017). A Fresh Apple or a New Barrel: Business Ethics from an Individual to Corporate Level. *European Journal of Economics and Business Studies*, Vol 3, No. 2, pp 8-15.
- Treviño, L. K., Weaver, G. R., and Brown, M. E. (2008). It's lovely at the top: Hierarchical levels, identities, and perceptions of organizational ethics. *Business Ethics Quarterly*, Vol 18, No. 2, pp 233-252.
- Trevino, L. K., and Nelson, K. A. (2016). *Managing business ethics: Straight talk about how to do it right*. John Wiley & Sons.
- Verbos, A. K., Gerard, J. A., Forshey, P. R., Harding, C. S., and Miller, J. S. (2007). The positive ethical organization: Enacting a living code of ethics and ethical organizational identity. *Journal of Business Ethics*, Vol 76, No. 1, pp 17-33.
- Weaver, G. R., Trevino, L. K., and Agle, B. (2005). "Somebody I look up to": ethical role models in organizations. *Organizational Dynamics*, Vol 34, No. 4, pp 313-330.
- Weaver, G. R., Trevino, L. K., and Cochran, P. L. (2013). Corporate ethics practices in the mid-1990s: An empirical study of the Fortune 1000. In *Citation Classics from the Journal of Business Ethics* (pp. 625-640). Springer, Dordrecht.
- Weber, J., and Fortun, D. (2005). Ethics and compliance officer profile: Survey, comparison, and recommendations. *Business and Society Review*, Vol 110, No. 2, pp 97-115.

Digital Transformation in Family Businesses: A Systematic Literature Review and Research Agenda

Efthymios Daskalopoulos and Ondřej Machek

Department of Strategy, Faculty of Business Administration, Prague University of Economics and Business, Czech Republic

dase00@vse.cz

ondrej.machek@vse.cz

Abstract: Digital transformation has become a necessity for many organizations, including family firms. Understanding the role and impact of digital transformation is crucial to guarantee family firms' survival and long-term prosperity in an uncertain and constantly developing environment. This study aims to synthesize the limited existing body of knowledge on digital transformation in family firms and identify future research directions. We employed a systematic literature review to address the goals and identified 30 relevant peer-reviewed papers published between 2019 and 2023. The limited number of existing family firm studies indicates the nascent state of research in this area and highlights the increasing research need in the rapidly expanding and evolving field of digital transformation and digitalization. The studies identify and provide insights into the drivers, challenges, strategies, and outcomes of the digital transformation process in family firms. Moreover, the review highlights challenges family firms face during digital transformation, such as the development, activation, or reconfiguration of new and existing capabilities and the deployment of resources by the family. Based on the findings, this systematic literature review identifies several promising avenues for future research. Within the particularities of the family business context, these include the role of family influence, possible antecedents to the process, enablers and barriers, explanatory mechanisms, and performance outcomes and implications. Although the number of identified studies is relatively limited, this review contributes to the literature by consolidating the current knowledge on digital transformation in family firms and highlighting areas for further investigation. Practitioners and policymakers can draw insights from this review to inform their decision-making processes regarding digital transformation strategies for family firms. Researchers are encouraged to address the identified research directions to advance our understanding of issues related to digital transformation in family firms and pave the way for future theoretical and practical advancements.

Keywords: Digital transformation, Family business, Systematic literature review

1. Introduction

Digital technologies have become the great enabler, presenting new and exciting opportunities for firms to change and innovate and eventually evolve their value proposition, internal structures, and organization (Yoo et al., 2012). The combination of intentional and targeted efforts in the digitalization of processes, products, services, and business models leads firms to the complete digital transformation (DT) of the organization, opening new avenues to do with new strategies, value creation, and new customer segments (Soluk and Kamerlander, 2021; Vial, 2019; Wessel et al., 2021). Although there are many possible definitions of the term “digitalization”, in this paper, we understood it as the “process of adopting and using digital technologies” in an organizational context (Legner et al., 2017, p. 301). As a consequence, digitalization entails multiple, and possibly fragmented, digital activities across the value chain of a business that, in their totality and according to their impact, can lead to firm-level DT. Although the topic of DT, which can be defined as “organizational change that is triggered and shaped by the widespread diffusion of digital technologies” (Hanelt et al., 2021, p. 1160), has gained much attention in business research, it is surprising how little we know about the phenomena in the context of the family business ecosystem.

Family firms (FFs) display fundamental differences from non-family firms (De Massis et al., 2014), especially regarding innovation and digitalization (De Massis et al., 2013; De Massis et al., 2015; Röd, 2019). Considering DT as a radical change process, we can expect that FFs will find elements of this new digital era challenging. To be able to remain competitive in this new environment and enjoy the medium to longer-term results of DT, FFs will need to deeply understand the variations and stages of the DT process, evolve existing and develop new required capabilities, and be open to change in general (Soluk and Kamerlander, 2021).

Based on the importance of both family businesses and DT as an evolving phenomenon with consequences for all levels of a business, we argue that the intersection of the two research streams is relatively under-explored. To address this gap, we present an organized view of knowledge amassed in prior research, intending to structure the landscape of current understanding and potential avenues for future research. To this end, we focus on the following research questions: What is the current status of research in digital transformation in

the context of family business? What are its antecedents, challenges, mechanisms, and outcomes? What are the significant future research opportunities?

To address the research questions presented above, we conducted a systematic literature review (SLR) and consistently categorized the findings according to both DT and FB research streams. The following text proceeds as follows. First, we introduce the methodology. Subsequently, we present the results. Then, we present the significant avenues for future research. Finally, we provide our concluding remarks.

2. Methodology

To address the study's research questions, we performed a SLR on the topic of DT in the context of FFs. Since our research questions are broad and the topic of DT is dynamically evolving and multifaceted, we aimed to include all relevant studies that would add value to categorizing, mapping, and organizing research around our topic.

Our selection procedure consists of 5 steps, consistent with our systematic aim. Firstly, we conducted a broad search in the Scopus and Web of Science (WoS) databases, selecting them as the most comprehensive research databases. We introduced a set of criteria that would determine the inclusion and exclusion of research articles. To collect our initial sample of papers, we employed keywords like "family" and "digit*" and "transformation" or "technolog*" or "*entrepreneur*" in the above databases. After excluding duplicates, the initial search produced 932 results, collating from both databases. We then proceeded with the second step of our process, narrowing down our list of potentials, keeping only peer-reviewed papers in the English language and only papers on relevant thematic topics around business, management, and economics. This step resulted in a sample of 125 studies. As the third step, we read through the abstracts of all the articles and evaluated their overall relevance to the topic, thus restricting our sample further to 31 studies. Subsequently, we read through all the papers and excluded another 10 articles based on relevance and erroneous initial categorization in the databases. Finally, we performed a manual search tracking citations of papers in our sample and added 9 more studies, bringing the final number of publications in our sample to 30.

3. Results

3.1 Drivers of Digital Transformation

Internal antecedents.

Leadership & strategy. During periods of digital entrepreneurship, Basly and Hammuda (2020) recognize that leadership should focus on transforming the business around the goals of agility and openness. The management team is expected to have a deep level of understanding of the organizational changes required in the context of adopting digital technologies. The authors highlight that the FF leadership team should possess characteristics such as entrepreneurial orientation, transformational leadership, high educational level and background, and prior exposure to digital technologies. Drawing on the human determinants that affect DT, the qualitative study of Ano and Bent (2020) highlights the personalized involvement of family leadership in DT, signifying the importance of a strong sense of mission communicated throughout the organization by the leadership.

Organization, structure & governance. Simplification and increased efficiency in the form of decentralization and lean project organization are highlighted by Basly and Hammuda (2020) as organizational determinants that will provide the systems and settings supporting the adoption of digital technologies and change. The family's involvement grants a distinguishable feature to FFs, as a set of unique rules and structures of governance are put in place (Siebels et al., 2012). To oppose rigid mental models and increase the speed and aggressiveness of the digital adoption rate, FFs need governance structures that enhance a shared vision between family and firm, reducing conflict and providing clarity of goals and objectives throughout the organization (Christman et al., 2015). Focusing on the concept of governance even further, the quantitative study by Dutot et al. (2022) recognizes the concept of IT governance as a part of agency theory, whereby a solid governance structure can dampen short-term agency phenomena that negatively impact DT. Finally, addressing succession in FFs, Ano and Bent (2020) underline the strategic importance of early engagement and preparation of future family generations to be involved in the business when fostering a positive DT climate.

Employees. The importance of human resources in digital transformation has been recognized by multiple authors (Ano and Bent, 2020; Basly and Hammuda, 2020; Kathuria et al., 2022). Employees as a critical resource, and in the community context of the FF, become vital elements of the adoption of digital

technologies when they perform in a stewardship environment with increased autonomy and empowerment (Basly and Hammuda, 2020) and when a digital strategy with an explicit consideration on human elements is transparently communicated to them (Ano and Bent, 2020). Investing in human capital (Ano and Bent, 2020) and external talent is crucial in professionalizing the workforce, enabling the organization to develop capabilities that will prove instrumental during DT. Kathuria et al. (2023) point out that when FFs invest in external executives, they can mitigate some of the adverse effects that family involvement might have on the adoption of digital technologies.

Resources. Resource scarcity is a theme widely discussed in the context of DT in FFs (Ano and Bent, 2020). DeGroot et al. (2023) suggest that success in the digital context, in general, and DT in particular, is influenced by the accessibility and allocation of historical capital, know-how, and experience amassed over the years, family collaborative capital, relationships developed with internal and external partners, and family venture capital in the form of FF private equity investment. Chrisman et al. (2015) recognize community and connections as resources influenced by the goals and governance structures of the family as they analyse the adoption of discontinuous technologies in their conceptual paper. Community can lead to a less formalized environment with positive effects on DT and connections with all stakeholders that can lead to timely acknowledgment of opportunities in the digital realm.

External antecedents.

Exogenous Shocks. The recent COVID-19 crisis has prompted several researchers to explore the behaviour of FFs during the crisis, with implications for digitalization and DT. Kraus et al. (2020) highlight a strong push of the firms toward change and rapid digitalization. Soluk (2022) explores the mechanisms behind FFs' adaptations triggered by exogenous shocks, starting from changes in the motives that influence resource allocation. FFs able to change during crises will likely exhibit rapid evolution in product, process, and business model innovation (Soluk and Kammerlander, 2021). Bouncken and Schmitt (2022) describe a reactive digitalization whereby the FF trails behind the current requirements but reacts to external stimuli and triggers that increase perceived urgency.

External Network. The external triggers of technological change are often traced to all entities interacting with the FF beyond the organizational boundary, in the form of customers, competitors, suppliers, and the general legal and regulatory environment (Bruque and Moyano, 2007). Soluk and Kammerlander (2021) describe how external pressures build up from business partners for a FF to proceed with digital technology adoption projects aligning both entities. Increased competition also leads to heightened business awareness (Rashid and Ratten, 2020), creating a sense of urgency within the FF. Furthermore, the authors recognize customer requests as potential DT opportunities.

3.2 Challenges of Digital Transformation

Family & behavioural challenges.

Family influence and involvement. Basly and Hammouda (2020) suggest viewing the influence of family members on the business in current or future dimensions. Specifically, the authors propose that the prioritization of current goals will have a negative impact on the adoption of digital technologies, while family influence, expressed as FF continuation, will have a positive impact. In their study of FFs, Ceipek et al. (2021) provide evidence of the negative impact of family involvement in IoT (Internet of Things) explorative innovation.

Socioemotional wealth. While researching technology acquisition in FFs, Kotlar et al. (2013) consider the role of the controlling family's socioemotional wealth (SEW) (Gomez-Mejia et al., 2010). The authors generalize the argument that FFs are willing to sacrifice economic performance to protect their SEW (Gomez-Mejia et al., 2010) to the field of technology adoption, as an investment in technology may represent a threat to the influence and character-building blocks of the FF (Basly and Hammouda, 2020). As family ownership and influence increase, the central requirement to preserve SEW intensifies (Kathuria et al., 2023), thus affecting digitalization efforts.

Risk aversion. The quest for preserving SEW will often lead to FFs' more risk-averse management attitudes (Basly and Hammouda, 2020). While not all FFs are highly risk-averse, many struggle with finding the right balance between risk-taking and preserving their identity, tradition, and legacy (Heider et al., 2022). Basly and Hammouda (2020) also argue that even the relationship between the presence of an external CEO and the family will be influenced by the levels of risk tolerance, leading to a narrower view of DT project investment

and implementation. As family owners frequently rely exclusively on the FF for sustainable revenues and profits for the family income, stability is often preferred over aggressive growth (König et al., 2013). The totality of the DT process requires a commitment to change and exploration, and therefore FF owners often tend to stay within the boundaries of the early efficiency improvement stages of DT (Kathuria et al., 2023), thus reducing the scope of the transformation (Heider et al., 2022).

Willingness to maintain control. The decision-making of FFs is often driven by a general reluctance to lose control and a preference to retain traditional management concepts (Ano and Bent, 2022). This fact certainly has a profound impact on DT, considering the disruptive nature of the process (DeGroote et al., 2023; Heider et al., 2022). To retain control and protect their SEW, families often steer away from risky projects, such as exploratory digital technologies (Ceipek et al., 2021), preferring stability over change and slow evolution over disruption (Basly and Hammouda, 2020). The family control preservation strategy is also highlighted by Ano and Bent (2022), whereby the exclusion of skilled external managers and external technologies often is preferred in an effort to retain control within the family circle (Kotlar et al., 2013; Soluk and Kammerlander, 2021).

Rigid mental models. Paternalistic decision-making is identified by Soluk and Kammerlander (2021) as an essential barrier to the development of the capabilities required for a DT. The authors make a case for instances of authoritarian management practices that are highly antithetical to the adoption of digital technologies. Traditionalism, combined with low levels of strategic vision and commitment, also often becomes an obstacle in the quest for the digital evolution of a FF (Bouncken et al., 2022).

Firm and Management

Centralization. Research has identified cases of management centralization in FFs that, when combined with low levels of digital competencies of managers, can become detrimental to digital evolution efforts (Bouncken et al., 2022). Kotlar et al. (2013) highlight that FF management is sometimes more sceptical when acquiring external technology, which could be attributed to the reluctance to decentralize decision-making processes.

Competences. Bouncken et al. (2022) identify the dualism of FF managers with relatively low digital competences, appearing over-confident in their competitive firm status while approaching the challenges with the ability to formulate a viable strategic plan. Soluk and Kammerlander (2021) present evidence of occasional inconsistencies in understanding DT and elements of the digital strategy. Developing competences by FFs is a particularly challenging endeavor as it presents a considerable strain on resources for the firm (Soluk and Kammerlander, 2021).

Resources. External capital availability for a(n) FF can prove a scarce resource (Kraus et al., 2019). FFs seeking continuity may seek access to external capital regarding digital investments (Chrisman et al., 2015). Additionally, resource limitation is often combined with the local nature of the FF, which narrows the options for digital business model transformation even further (Cravotta and Grottke, 2020). DeGroote et al. (2023) recognize the importance of accessing external resources, such as patents, trademarks, and copyrights, through vehicles like external family corporate ventures.

3.3 Mechanisms and Strategies of Digital Transformation

Process model. In their qualitative study, Soluk and Kammerlander (2021) suggest a process model of three stages for DT in FFs. The authors recognize the first stage as the process digitalization stage, where various processes and information streams are digitized within the family context. The next stage is identified as the product and service digitalization stage, where elements of the value offering of the FF are being digitalized, and the relationship with various customers and suppliers is also affected. The third and final stage is that of the business model digital transformation, where the authors view the totality of the business model affected and an integrated permeation of digital technologies in most elements of the value chain. To transition between the stages of the process model, the authors discuss various triggers and the related dynamic capabilities required, which will touch upon below, along with other research findings around strategies and mechanisms of DT.

Capabilities. FFs seeking to effectively adopt, internalize, and use digital technologies as a transformation platform will rely on the evolution of existing operating capabilities and the development of new, dynamic capabilities. Soluk and Kammerlander (2021) identify various operational and dynamic capabilities in each of the three stages of their DT process model presented above. In the process digitalization stage, the authors suggest focusing on new, sensing, operational capabilities, such as developing and reconfiguring existing

business procedures and configuring and utilizing a basic technical set-up. Through these capabilities, the authors posit that FFs will develop an understanding and assessment capacity of the digital landscape while focusing on efficiency improvements. In the second stage of the DT process, when transforming their product and service offering, Soluk and Kammerlander (2021) theorize that FFs will rely on a combination of operational capabilities and new dynamic capabilities, such as adopting changes in digital strategic decision-making, reconfiguration of existing business patterns, and identifying, internalizing, and adding commercial value to new digital information from various sources. In the final stage of digital business model transformation, the authors recognize all previously developed capabilities as well as new capabilities that encompass the totality of the firm and include knowledge and learning (Soluk et al., 2021), digital mindset (Rashid and Ratten, 2020), communication and coordination via strategic partnerships, high degrees of autonomy, and decentralization and marketing (Soluk et al., 2021; Soluk et al., 2023; Rashid and Ratten, 2020).

3.4 Outcomes of Digital Transformation

In our SLR, we found little exploratory research performed on the outcomes of the DT process in the context of FFs. Most of the research questions and hypotheses tested revolved around the mechanisms and motivations for adopting digital technologies by FFs, as well as the challenges FFs face when presented with the new digital age. In the next section, we present the few outcomes found in the literature. Ano et al. (2022) identify significant performance outcomes and transformations in change management attitudes, the emotional connection towards the digital phenomenon, innovation behaviours, the individual involvement of family members in the DT process, and the interaction between family management and employees trending towards empowerment and autonomy. In terms of organizational outcomes and structural changes, Soluk et al. (2021) describe how, through an exogenous shock and a process of digitalization, FFs are opening up to forming new alliances, expanding to digital platforms, and reducing mental rigidity, which fosters the adaptive capacity of the firm.

4. Future Research

Type of studies. Our SLR sample consisted of only 7 longitudinal studies. As DT is a time-varying phenomenon, with stages of the process influencing the current and future status of the firm, further research of a longitudinal nature is required to gain a more comprehensive understanding of the DT phenomena in FFs. Poeschl and Freiling (2020) propose a focused research path of longitudinal studies that would consider DT and succession in FFs (Pruegl and Spitzley, 2021; Soluk et al., 2021). Soluk and Kammerlander (2021) also support longitudinal studies as helpful to expand and possibly improve their DT process model.

Concepts. Basly and Hamuda (2020) recognize the need for further research in measuring digital entrepreneurship adoption rates and DT. Similarly, Ano and Bent (2022) propose further empirical research to establish a testable hypothesis between the identified resources and capabilities and their impact on the DT process. Soluk and Kammerlander (2021) encourage future research in the direction of the identification of other barriers and enablers of the DT process in FFs. Furthermore, by expanding the set of barriers and enablers, the authors point out that a different set of dynamic capabilities will emerge, applicable to different stages of the transformation model. The authors also point out the need for expansion on the concept of SEW and the non-economic goals of the family (Pruegl and Spitzley, 2021) as means of exploring the willingness of the family to engage in a DT path. Heider et al. (2022) propose the further breakdown of ability and willingness in FFs into subdimensions and the assessment of the impact of these on DT. Soluk et al. (2021) recognize the need for further research on how family members perceive risk and the impact of the perception on digital business models.

Business contexts. Further research in the business contexts of internationalization and specific geographical (Soluk et al., 2021) and industry dimensions (Upadhyay et al., 2017) is suggested by Basly and Hamuda (2020). The authors also propose focusing on the impact of specific digital tools (Upadhyay et al., 2017), such as platforms, on the FF's various aspects (organizational, governance, managerial).

Impact and outcomes. Ano and Bent (2022) suggest measuring the actual impact of DT, in comparison with non-family firms, on performance and organizational changes. Soluk and Kammerlander (2021) also suggest exploring performance effects in the form of increased profitability, customer interactions, and competitive advantage.

5. Conclusion

Digital transformation can be an inflection point for family businesses and can signify a new era of ‘hybrid’ family firms, ones that will embrace deep and integral digital transformation and, in the process, shed some of their more rigid, traditional characteristics. Our systematic literature review demonstrates that the topic of DT in FFs is still relatively underdeveloped, primarily due to the breadth of the DT phenomenon, combined with the heterogeneity of FFs.

The outcomes and impacts of digital transformation initiatives in family firms extend beyond mere financial performance, encompassing the organizational structure, internal processes, and even the firm's value proposition.

Our review contributes to both the FF and the DT literature in several ways. Initially, as far as we know, this is the first attempt to systematically summarize research findings around digital technology adoption in family businesses. Furthermore, we present the relatively fragmented nature of research, and by categorizing and organizing the findings, we attempt to set a structure that can be the basis for future research efforts.

For sure, this study is not without limitations. First, our sample of studies was only limited to peer-reviewed academic papers. While those represent the major contribution to the development of a research field, interesting findings in conference proceedings or working papers could have been overlooked. Second, consistent with many other authors, we only reviewed papers written in English and searched in two databases. Also, in this case, we cannot rule out that some remarkable insights have been omitted. Finally, we would highlight the need for the current study to be further extended towards the development of a comprehensive framework around DT in FFs that will guide research opportunities for the future.

Acknowledgement

We appreciate the funding support received from the Czech Science Foundation for the project entitled “Intrafamily Conflicts in Family Firms: Antecedents, Effects and Moderators” (registration no.: GA20-04262S).

References

- Ano, B. and Bent, R., 2022. Human determinants influencing the digital transformation strategy of multigenerational family businesses: a multiple-case study of five French growth-oriented family firms. *Journal of Family Business Management*, 12(4), pp.876-891.
- Basly, S. and Hammouda, A., 2020. Family businesses and digital entrepreneurship adoption: A conceptual model. *The journal of entrepreneurship*, 29(2), pp.326-364.
- Bouncken, R. and Schmitt, F., 2022. SME Family firms and strategic digital transformation: inverting dualisms related to overconfidence and Centralization. *Journal of Small Business Strategy*, 32(3), pp.1-17.
- Bruque, S. and Moyano, J., 2007. Organisational determinants of information technology adoption and implementation in SMEs: The case of family and cooperative firms. *Technovation*, 27(5), pp.241-253.
- Ceipek, R., Hautz, J., De Massis, A., Matzler, K. and Ardito, L., 2021. Digital transformation through exploratory and exploitative internet of things innovations: The impact of family management and technological diversification. *Journal of Product Innovation Management*, 38(1), pp.142-165.
- Chrisman, J.J., Fang, H., Kotlar, J. and De Massis, A., 2015. A note on family influence and the adoption of discontinuous technologies in family firms. *Journal of Product Innovation Management*, 32(3), pp.384-388.
- Cravotta, S. and Grottke, M., 2019. Digitalization in German family firms—some preliminary insights. *Journal of Evolutionary Studies in Business*, 4(1), pp.1-25.
- de Groote, J., Soluk, J., Laue, S.L., Heck, M. and Kammerlander, N., 2023. How can family-owned Mittelstand firms use their unique resources to master the digitalization age? The role of family historical, venture, and collaborative capital. *Business Horizons*, 66(1), pp.133-152.
- De Massis, A., Frattini, F. and Lichtenthaler, U., 2013. Research on technological innovation in family firms: Present debates and future directions. *Family Business Review*, 26(1), pp.10-31.
- De Massis, A., Frattini, F., Pizzurno, E. and Cassia, L., 2015. Product innovation in family versus non-family firms: An exploratory analysis. *Journal of Small Business Management*, 53(1), pp.1-36.
- De Massis, A., Kotlar, J., Chua, J.H. and Chrisman, J.J., 2014. Ability and willingness as sufficiency conditions for family-oriented particularistic behavior: implications for theory and empirical studies. *Journal of Small Business Management*, 52(2), pp.344-364.
- Dutot, V., Bergeron, F. and Calabrò, A., 2022. The impact of family harmony on family SMEs' performance: the mediating role of information technologies. *Journal of Family Business Management*, 12(4), pp.1131-1151.
- Gomez-Mejia, L.R., Cruz, C., Berrone, P. and De Castro, J., 2011. The bind that ties: Socioemotional wealth preservation in family firms. *The academy of management annals*, 5(1), pp.653-707.

- Hanelt, A., Bohnsack, R., Marz, D. and Antunes Marante, C., 2021. A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), pp.1159-1197.
- Heider, A.K., Clauss, T., Hülsbeck, M., Gerken, M. and Rüsen, T.A. 2022. Blood is Thicker Than Water: The Role of Family Willingness and Family Ability in Achieving Holistic Digitalisation in Family Businesses. *International Journal of Innovation Management*, 26(3), p.2240009.
- Kammerlander, N. and Ganter, M., 2015. An attention-based view of family firm adaptation to discontinuous technological change: Exploring the role of family CEOs' non-economic goals. *Journal of Product Innovation Management*, 32(3), pp.361-383.
- König, A., Kammerlander, N. and Enders, A., 2013. The family innovator's dilemma: How family influence affects the adoption of discontinuous technologies by incumbent firms. *Academy of management review*, 38(3), pp.418-441.
- Kathuria, A., Karhade, P.P., Ning, X. and Konsynski, B.R., 2023. Blood and Water: Information Technology Investment and Control in Family-owned Businesses. *Journal of Management Information Systems*, 40(1), pp.208-238.
- Kotlar, J., De Massis, A., Frattini, F., Bianchi, M. and Fang, H., 2013. Technology acquisition in family and non-family firms: A longitudinal analysis of Spanish manufacturing firms. *Journal of Product Innovation Management*, 30(6), pp.1073-1088.
- Kraus, S., Clauss, T., Breier, M., Gast, J., Zardini, A. and Tiberius, V., 2020. The economics of COVID-19: initial empirical evidence on how family firms in five European countries cope with the corona crisis. *International journal of entrepreneurial behavior & research*, 26(5), pp.1067-1092.
- Le Breton-Miller, I. and Miller, D., 2006. Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship theory and practice*, 30(6), pp.731-746.
- Legner, C., Eymann, T., Hess, T., Matt, C., Böhm, T., Drews, P., Mädche, A., Urbach N. and Ahlemann, F. 2017. Digitalization: opportunity and challenge for the business and information systems engineering community. *Business & information systems engineering*, 59, 301-308.
- Melović, M., Baynazoğlu, M.E. and Šerić, N., 2023. Family businesses in tourism—the use of digital technologies in times of uncertainty and crisis. *Journal of Family Business Management*, 13(1), pp.185-209.
- Pöschl, A. and Freiling, J., 2020. The impact of family-external business succession on digitalization: exploring management buy-ins. *International Journal of Information Systems and Project Management*, 8(2), pp.24-46.
- Prügl, R. and Spitzley, D.I., 2021. Responding to digital transformation by external corporate venturing: An enterprising family identity and communication patterns perspective. *Journal of Management Studies*, 58(1), pp.135-164.
- Rashid, S. and Ratten, V., 2020. A dynamic capabilities approach for the survival of Pakistani family-owned business in the digital world. *Journal of Family Business Management*, 10(4), pp.373-387.
- Röd, I., 2019. TMT diversity and innovation ambidexterity in family firms: The mediating role of open innovation breadth. *Journal of Family Business Management*, 9(4), pp.377-392.
- Sibanda, W., Bakhouch, A., Chaita, M. and Kehal, M., 2020. Disruptive technology adoption dynamics by United Arab Emirates small-to-medium enterprises. *International Journal of Business Performance Management*, 21(4), pp.477-503.
- Soluk, J., 2022. Organisations' resources and external shocks: exploring digital innovation in family firms. *Industry and Innovation*, 29(6), pp.792-824.
- Soluk, J., Decker-Lange, C. and Hack, A., 2023. Small steps for the big hit: A dynamic capabilities perspective on business networks and non-disruptive digital technologies in SMEs. *Technological forecasting and social change*, 191, p.122490.
- Soluk, J. and Kammerlander, N., 2021. Digital transformation in family-owned Mittelstand firms: A dynamic capabilities perspective. *European Journal of Information Systems*, 30(6), pp.676-711.
- Soluk, J., Kammerlander, N. and Darwin, S., 2021. Digital entrepreneurship in developing countries: The role of institutional voids. *Technological Forecasting and Social Change*, 170, p.120876.
- Soluk, J., Kammerlander, N. and De Massis, A., 2021. Exogenous shocks and the adaptive capacity of family firms: exploring behavioral changes and digital technologies in the COVID-19 pandemic. *R&D Management*, 51(4), pp.364-380.
- Soluk, J., Miroshnychenko, I., Kammerlander, N. and De Massis, A., 2021. Family influence and digital business model innovation: the enabling role of dynamic capabilities. *Entrepreneurship Theory and Practice*, 45(4), pp.867-905.
- Union, L., Suen, C. and Mancha, R., 2022. Diunsa: An entrepreneurial family's digital response to Covid-19. *Entrepreneurship Education and Pedagogy*, 5(3), pp.423-428.
- Upadhyay, N., Upadhyay, S., Al-Debei, M.M., Baabdullah, A.M. and Dwivedi, YK, 2023. The influence of digital entrepreneurship and entrepreneurial orientation on intention of family businesses to adopt artificial intelligence: examining the mediating role of business innovativeness. *International Journal of Entrepreneurial Behavior & Research*, 29(1), pp.80-115.
- Yao, M. and Li, J., 2023. The causal exploration of digital entrepreneurial psychological capital configurations based on fsQCA. *Journal of Innovation & Knowledge*, 8(1), p.100291.
- Yoo, Y., Boland Jr, R.J., Lyytinen, K. and Majchrzak, A., 2012. Organizing for innovation in the digitized world. *Organization science*, 23(5), pp.1398-1408.

Can Teal Practices Increase Employees' Work Engagement?

Muriel Davies and Stéphanie Buisine

CESI, LINEACT, Nanterre, France

mdavies@cesi.fr

sbuisine@cesi.fr

Abstract: Because engaged employees work with passion, in deep connection with their company and are innovative, they may drive their organization's performance. Teal organizations, which implement original and inspiring ways of working, appear particularly favourable to create and support engagement in the long run. The aim of this paper is twofold: first, to study engagement drivers and barriers among many organizational dimensions, and secondly to characterize Teal Organization through their practices. We also hypothesize that Teal practices may drive employees' engagement. To this aim, we built a questionnaire and performed a cross-industry survey in France. The survey included a standardized measure of engagement, an assessment of organizational structure, management, leadership styles and social climate based on scholarly literature, and a series of questions dealing with Teal practices that we designed. The sample was composed of 767 respondents on behalf of their company. Using multiple regression analysis, we observe that engagement is predicted by social openness of the company and by organizational trust. Teal practices aggregate in a statistically reliable manner into a construct that we call Teal index. If Teal index is not a direct predictor of engagement, it appears to contribute to predicting trust, which itself predicts engagement. These results are insightful in many ways: they highlight trust as a key factor of engagement, offer a first overview of the adoption of Teal practices among French companies and open up avenues for capturing Teal philosophy beyond observable and measurable practices in everyday corporate life. These findings are discussed with an evolutionary viewpoint to better understand current and future transformation of organizations.

Keywords: Work engagement, Teal practices, Organizational trust, Transformational leadership

1. Teal Practices as Engagement Drivers

1.1 Work Engagement and Organizational Factors

In psychological literature, engagement is defined as a positive and fulfilling work-related state of mind (Schaufeli and Bakker, 2004; Schaufeli, 2013). Engagement is characterized by vigor, dedication and absorption.

Vigor means showing a strong determination and energy when working, willing to carry out projects voluntarily and finding resources when experiencing difficulties. Dedication generates enthusiasm when working, as well as pride, inspiration, and turns work into a challenge. A dedicated person is able to get involved beyond what is expected. Absorption corresponds to a high level of concentration. In this state, individuals lose sense of time and may have difficulties stopping their activity. Absorption can be related to flow, as defined by Csikszentmihalyi (1990): effortless concentration, time distortion, body and mind unity (Šimleša *et al.*, 2018). However Flow is of short duration contrary to engagement (Rottemberg, 2021).

Work engagement has been extensively studied, in various countries and various industries (Motyka, 2018). It is a good predictor of numerous indices of performance at individual, team or organizational levels (Motyka, 2018). The annual Gallup reports on engagement have probably contributed to the diffusion of this concept among non-academic audiences such as companies and managers (Gallup, 2013, 2023). Engagement being a subject of interest for both academics and practitioners, the identification of its drivers and barriers among organisational structure, management, leadership or social climate is highly valuable.

Organizational structure, management and leadership styles provide guidance on how a company operates. As for structures, one can roughly categorize them into hierarchical, functional, matrix or network structures (Rottemberg, 2021). Regarding management, Hersey-Blanchard Situational Theory, which was first published in 1969 (Hersey and Blanchard, 1969b, 1969a), is still used today (Meirovich and Gu, 2015). This theory explores two dimensions of management: a human-centred one and a task-centred one. These two axes bring out four areas, corresponding to four management styles: directing (task orientation without human orientation), coaching (task and human orientations), participating (human orientation without task orientation), and delegating (low human and low task orientations). Finally, leadership is unrelated to management, seniority or hierarchical position in the company. It is a social influence process enabling individuals to achieve their goals (Kruse, 2013). To describe leadership, the transformational/transactional model proposed by Bass (Bass, 1990; Avolio and Bass, 2001) appears to be especially relevant. The transformational leader inspires employees through values where the transactional leader motivates by giving rewards and punishments. Transformational leadership was shown to increase engagement of employees and teams, innovation, psychological well-being and general performance (Boudrias, Brunelle and d'Amours, 2015).

Social climate corresponds to the interaction between employees and organisation. It is measured by employees' perception of practices and relationships at work. The concept of social climate takes its origins in Lewin's (1951) model which emphasizes the role of the environment, and not only the individual, on work. Social climate appeared to be linked to the way employees are treated, guided and managed (Litwin and Stringer, 1968). Social climate can be approached through organizational trust, social openness, and social dialog for example. All these concepts apply to classical contemporary organizations, but they may not have applied to organizations from the distant past and may not apply to organizations in the distant future, in which major foundations such as hierarchy, management or structure may disappear.

1.2 Teal Organizations

In his book *Reinventing Organizations*, Laloux (2014) describes an emergent kind of organization which implements original and inspiring ways of working. This type of organization seems to enhance employees' engagement. It is called Teal and is characterized by three organizational innovations. The first organizational innovation is individual wholeness seeking. It means that rationality and determination are no longer the only professional behaviours accepted, and that intuition and spirituality are welcomed. The second organizational innovation is self-management. It is characterized by the absence of hierarchy and the equality of relationship. Despite no hierarchy, no consensus is expected when deciding, which leads to a surprising efficiency (Laloux, 2014). The third innovation of the Teal stage is the organizational evolutionary purpose. A higher-order purpose, beyond economical concerns, is present in everyday situation, supports engagement and decision making. Profit is no more viewed as an end and not sought as such. The organization is perceived as an independent and living being, adapting to complex environment and showing high resiliency, which explains why the organizational purpose is called evolutionary.

Teal is one of the stages of an evolutionary model of organizations (Laloux, 2014), which also accounts for more contemporary stages of evolution, such as the Amber stage (i.e., conformist and stable structures with well-defined functions and processes, like many public administrations) and the Orange stage (which promotes innovation, responsibility, and meritocracy, like many multinationals). Green (fostering empowerment, inclusiveness, and meaningfulness) and Teal are more recent and marginal forms of organizations. The Orange stage, which flourished with the development of industry and is mainly driven by economic performance, is the more influencing stage in our contemporary society. Compared to Orange organizations, Teal organizations have developed new practices, and have left some others inherited from the Orange stage.

Although this model is not fully validated, it can be articulated with existing theoretical framework addressing organizational culture, psychogenesis and sociogenesis. This evolutionary model draws on theories of human development (Graves, 1970; Beck and Cowan, 1996; Wilber, 2000) which model individual psychological growth during lifetime through the alternation of individualistic and collectivist stages progressing from the satisfaction of physiological needs towards the satisfaction of highest psychological needs. In Laloux' model, the same applies to the stages of evolution of human organizations. This evolution at the organizational level is also in line with Inglehart's seminal work on cultural, economic and political change in post-industrial democracies (Inglehart, 2018). When economic security is satisfied, basic political priorities may naturally shift towards post materialism (e.g., increasingly rational, tolerant, trusting, and participatory values) and the fulfilment of individual and psychological needs (e.g., well-being, intellectual life, relatedness, aesthetics). Because of its evolutionary nature, Laloux' (2014) model completes existing models of organizational culture, which offer a picture of mainstream practices in a given time, for example the Competing Values Framework (Cameron and Quinn, 2011), the Organizational Culture Inventory (Cooke and Szumal, 2000), and the Organizational Culture Profile (O'Reilly III, Chatman and Caldwell, 1991). Some features of Teal organizations are accounted for in the previous models, but none of them includes the main Teal characteristic, the self-determined evolutionary purpose transcending economical concern.

Through Laloux' description of the Teal stage, 21 new practices and 8 disappearing ones were identified as new (Laloux, 2014). Concerning organizational structure, new practices appeared such as autonomous teams integrating support functions, while other practices disappeared as strong pyramidal structure, coordination via top-down meetings, or support functions provided by specialised departments. Concerning governance, decisions are made differently in Teal organizations. They do not require systematic hierarchy validation anymore, neither are they the sole responsibility of top management. Teal organizations invented a decentralised decision-making process based on an advice solicitation. As anyone can take a decision, Teal organization systematically manage conflicts using a definite process. This is a brand-new practice. Some other new practices proposed by Teal organizations are dealing with speech distribution; anyone can make his voice

heard, and egos are drained. Others are dealing with integrating newcomers, who benefits from a long immersion route throughout the organization and who are trained to soft skills and organizational culture. Finally Teal organizations also developed new practices also around their evolutionary purpose. Especially clear values arise out of it, known and recognised by anyone. In addition, explicit and protective rules of behaviour are set and shared among employees.

1.3 Research Questions and Hypotheses

The **primary research question** deals with the existence and consistency of such a Teal stage of evolution and the existence of such Teal companies. If the occurrence and adoption of Teal practices appear to be linked and consistent with one another, they may well be the manifestation of a common underlying phenomenon, namely a new organizational paradigm. Conversely, if Teal practices are not linked to one another, this would challenge the evolutionary model. Hence according to our **Hypothesis H1**, the 29 Teal practices will statistically aggregate reliably into a single construct that we will call the Teal index.

A subsequent **exploratory research question** addresses the current state of adoption of Teal practices among French organizations. In this respect, we do not have a formal hypothesis to test, even if we assume that the Teal index will show relatively low.

Our **final aim** is to demonstrate the statistical relation between the Teal index and work engagement. In particular, we hypothesize (**Hypothesis H2**) that Teal index will exhibit a greater predictive power on engagement than traditional organizational and managerial practices. To inform these research questions and test these hypotheses, we performed a cross-industry survey in France.

2. Large-Scale Survey

2.1 Sample

767 French-speaking participants took the survey on behalf of their organization; the sample was composed of 50% women, 48% men and 2% persons who did not identify their gender. They were on average 28,14 years old (SD = 6,94). All of them were working for different companies, 85% in industry, 9% in construction and 6% in services to industry. 13% of their companies had less than 29 employees, 24% had between 50 and 249 employees, 23% had between 250 and 999 employees, and 40% counted more than 1000 employees. Respondents were all engaged in a one-year executive training program that they followed as initial or as continuing training in our institute and were recruited in this context. The participants filled out an online questionnaire during a one hour dedicated session, collaborating with their industrial mentor. 89 % of mentors had more than 5 years of service in their company, and 73% more than 10 years.

2.2 Material

The survey included 87 items, associated to 7-point Likert-type scales. 29 items dealt with Teal practices, and 58 dealt with individual engagement and organizational context. We used validated scales as far as possible. 9 more items were dedicated to sample characterization.

Work engagement was measured through the UWES (Hollet, 2005; Schaufeli, Bakker and Salanova, 2006) with a reliability of $\alpha = 0.638$ in our sample. Regarding organizational structure, we used 4 normalised organigrams (Figure 1), for which participants were asked to rate the extent to which they match their company's structure.

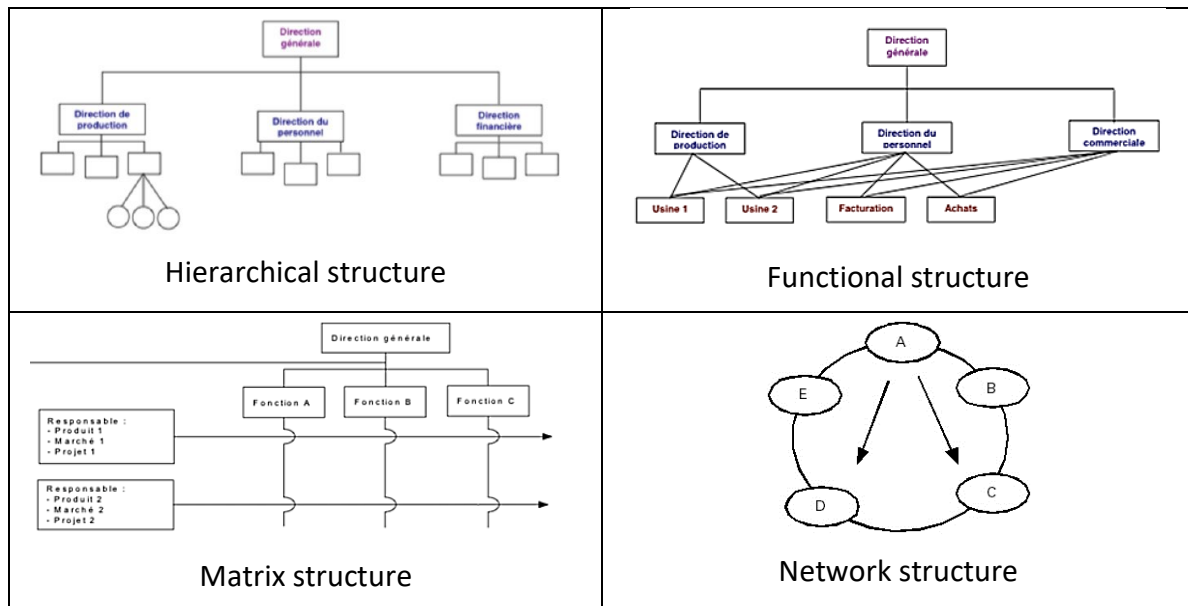


Figure 1: Flowcharts inserted in the survey to assess organizational structure

Management style assessment was based on four items referring to the four management styles from Hersey and Blanchard's (1969b) model. Leadership was measured on the one hand through MLQ-Multifactor Leadership Questionnaire (Bass *et al.*, 2003) for transformational leadership style ($\alpha = 0.895$), and through the leadership criteria ($\alpha = 0.716$) of the EFQM questionnaire survey (Martín-Castilla and Rodríguez-Ruiz, 2008).

Social climate was approached through several concepts: social openness ($\alpha = 0.818$) and task clarity ($\alpha = 0.799$) from the organizational climate questionnaire (ECPA, 1984). Trust was measured through the four following items:

- Our line managers trust employees;
- ...ensure that employees have confidence in each other;
- ...ensure that employees have confidence in their superiors;
- We feel capable of achieving the objectives that are set for us.

And we measured values with the following items ($\alpha = 0.793$):

- Company values are clearly identified.
- Managers tend to pass on company values to teams.
- The values come from top management and are relayed by managers, thus constituting the culture of the company.

Regarding Teal practices, based on Laloux' (2014) work, we designed the 29 following items, categorized into three sets:

In terms of organization, in my company...

- ... teams are fully autonomous - they do not receive instructions from a hierarchy and do not have to seek their approval.
- ...coaches, without responsibility for results or managerial authority, are available to support the teams.
- ...there is a very strong pyramidal structure. (inverted item)
- ...coordination takes the form of regular meetings at all levels, organised from top to bottom. (inverted item)
- ...specific services provide support functions: HR, IT, purchasing, finance, quality, security, etc. (inverted item)
- ...most support functions (HR, IT, purchasing, finance, quality, security, etc.) are provided within each team or through voluntary working groups, and not through specialized services.

Concerning human resources, in my company...

- ...Human Resources service and hierarchy carry out the job interviews. (inverted item)
- ...the applicant's future colleagues conduct hiring interviews.
- ...when onboarding, newcomers follow a substantial immersion route allowing him/her to discover the entire organization.
- ...any newcomer is thoroughly trained in interpersonal relationships and corporate culture.
- ...each employee, throughout his/her career, sets his/her base salary, and his/her colleagues adjust it if the assessment appears overestimated or underestimated.
- ...each employee tries to identify his/her vocation and questions his alignment with the purpose of the company.
- ... Personal time/working time balance is discussed frankly with each employee.
- ...there is a great deal of flexibility in working hours, provided that commitments are met.

In my company daily life...

- ... workspaces are warm, decorated by employees and open to children and/or animals and/or nature.
- ...workspaces strongly mark social status. (inverted item)
- ...everyone can make their voice heard, regardless of their role in the organization.
- ...specific approaches exist to hold off egos, especially during meetings.
- ...information is possessed by powerful persons who communicate it parcimoniously. (inverted item)
- ...all information is shared in real time with everyone, including financial and salary information.
- ...moments are planned to uncover and discuss conflicts.
- ...there is a structured process for conflict resolution.
- ...the values of the organization are clear and translated into explicit rules of behaviour. They promote a protective environment.
- ...there is a process for regularly questioning the rules.
- ...there are rest and meditation rooms for employees.
- ...we consciously seek to maintain a climate that will best serve the organization's raison d'être, particularly through foundational stories.
- ...decisions are all made at the top of the pyramid. (inverted item)

3. Results

3.1 Hypothesis H1: Consistency of the Teal index

To test hypothesis H1, we computed both a Cronbach's alpha and a Kaiser-Meyer-Olkin index. Both proved very high: $\alpha = 0.777$, $KMO = 0.828$ ($p < 0.001$), which confirms that the 29 practices we measured aggregate in a statistically reliable manner. Hence we can use a Teal index and study its distribution (see section 3.2.). To better inform the conceptual consistency of the index, we also studied how it correlates with organizational structures, management and leadership styles. The results (Table 1) notably show that the Teal index correlates negatively with a hierarchical pyramidal structure ($r = -0.195$, $p < 0.001$) and with a directing management ($r = -0.366$, $p < 0.001$). Conversely, it most strongly correlates with transformational leadership ($r = 0.488$, $p < 0.001$).

Table 1: Correlation between the Teal index, organizational structures, management styles and transformational leadership. Positive significant correlations are highlighted in green, and negative significant correlations are highlighted in yellow

		Organizational structure				Management style				Transformational leadership
		Hierarchical	Functional	Matrix	Network	Directing	Coaching	Participating	Delegating	
Correlation to Teal index	r	-0.195	0.103	0.147	0.216	-0.366	0.217	0.209	-0.047	0.488
	p	< 0.001	0.004	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.194	< 0.001

3.2 Distribution of the Teal Index

In line with our assumption, the Teal index in our sample of French companies amounts to $M = 3.46$ ($SD = 0.663$) on a 7-point scale and follows a normal distribution ($SW(767) = 0.997$, $p = 0.146$), although slightly shifted to the left (Figure 2).

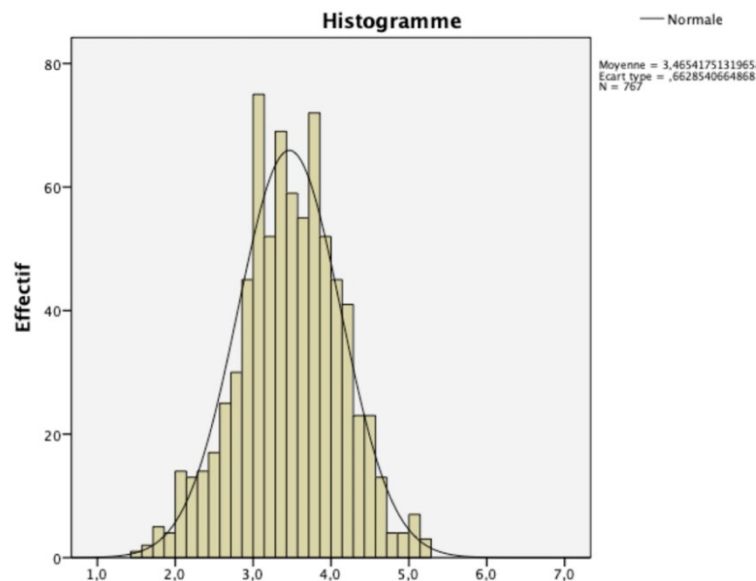


Figure 2: Teal index distribution

More specifically, Figure 3 details the mean and standard error of adoption of each Teal practice. It is clear that some of them are more widely adopted (e.g., possibility for anyone to make his voice heard, removal of social status signs, clarity of values, work/life balance, onboarding process) while others remain marginal (e.g., decentralization of support functions, self-determined wage, self-management).

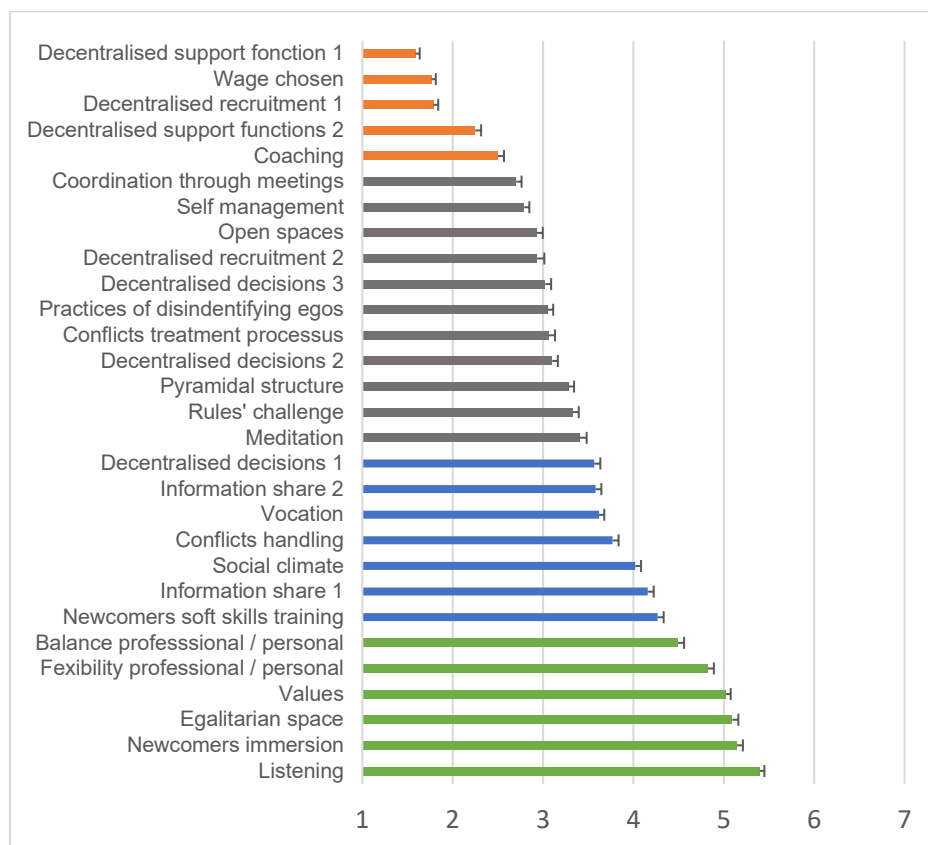


Figure 3: Mean and standard error of adoption of the 29 Teal practices among our sample

3.3 Hypothesis H2: The Drivers of Work Engagement

To test H2, we performed a multiple regression analysis with engagement as Dependent Variable, and all other variables as predictors, using SPSS 21. The results (see Table 2) highlight only two significant positive predictors: social openness ($\beta = 0.242$, $p < 0.001$), and trust ($\beta = 0.158$, $p = 0.004$). Contrary to Hypothesis H2, the Teal index is not a significant predictor of work engagement.

Table 2: Regression analysis with engagement as dependent variable. Positive significant predictors are highlighted in green, Teal index (Hypothesis H2) is highlighted in grey

Model	A	Standard error	β	t	Sig.
(Constant)	2,992	0,328		9,111	0
Hierarchical structure	-0,014	0,019	-0,026	-0,742	0,458
Functional structure	-0,004	0,016	-0,008	-0,245	0,806
Matrix structure	0,026	0,016	0,055	1,601	0,11
Network structure	-0,028	0,02	-0,048	-1,368	0,172
Participating management	0,021	0,02	0,039	1,06	0,29
Directing management	-0,009	0,023	-0,015	-0,392	0,696
Delegating management	-0,029	0,02	-0,051	-1,46	0,145
Coaching management	-0,004	0,022	-0,006	-0,173	0,863
Social dialogue	-0,002	0,033	-0,002	-0,056	0,955
Teal index	-0,013	0,063	-0,008	-0,204	0,838
Transformational leadership	0,115	0,066	0,105	1,747	0,081
Trust	0,163	0,057	0,158	2,863	0,004
Values	0,035	0,052	0,036	0,676	0,499
Leadership	-0,049	0,038	-0,054	-1,304	0,192
Social openness	0,246	0,048	0,242	5,128	0
Task clarity	0,043	0,036	0,05	1,196	0,232
Innovation	0,003	0,029	0,004	0,099	0,921
a. Dependent variable: ENGAGEMENT					

3.4 Further Exploration

As trust appears to be a central concept, we performed a second round of analysis removing Engagement and including Trust as Dependent Variable. The results (see Table 3) highlight four significant positive predictors of trust: social dialogue ($\beta = 0.088$, $p = 0.002$), Teal index ($\beta = 0.074$, $p = 0.006$), transformational leadership ($\beta = 0.594$, $p < 0.001$) and task clarity ($\beta = 0.139$, $p < 0.001$). Transformational leadership appears to be by far the strongest predictor of trust ($\beta = 0.594$).

Table 3: Regression analysis with trust as dependent variable. Positive significant predictors are highlighted in green

Model	A	Standard error	β	t	Sig.
(Constant)	0,671	0,21		3,203	0,001
Hierarchical structure	0	0,012	0	0,02	0,984
Functional structure	-0,003	0,01	-0,008	-0,339	0,735
Matrix structure	-0,011	0,01	-0,024	-1,036	0,3
Network structure	0,001	0,013	0,002	0,073	0,942

Model	A	Standard error	β	t	Sig.
Participating management	0,015	0,013	0,029	1,199	0,231
Directing management	-0,026	0,015	-0,046	-1,804	0,072
Delegating management	-0,006	0,013	-0,01	-0,44	0,66
Coaching management	0,022	0,014	0,038	1,543	0,123
Social dialogue	0,067	0,021	0,088	3,16	0,002
Teal index	0,112	0,041	0,074	2,759	0,006
Transformational leadership	0,634	0,036	0,594	17,866	0
Values	-0,018	0,033	-0,019	-0,538	0,591
Leadership	-0,033	0,024	-0,038	-1,365	0,173
Social openness	0,058	0,031	0,058	1,872	0,062
Task clarity	0,116	0,023	0,139	5,073	0
Innovation	0,009	0,019	0,012	0,469	0,639
a. Dependent variable: Trust					

4. Discussion and Conclusion

This cross-industry study first enabled us to capture a common underlying phenomenon behind a series of disparate organizational practices, namely a Teal index (Hypothesis H1) possibly reflecting a shift in organizations' stage of evolution (Laloux, 2014). Beyond statistical reliability, the fact that Teal index correlates positively to transformational leadership and negatively to hierarchical and directing approaches supports the internal conceptual consistency of the philosophy behind the practices. As we had anticipated, the mean Teal index is relatively low in our sample of French companies (below the middle of the scale), which suggests that this stage of evolution is still an emerging trend in our country and that Teal companies remain marginal in French industrial landscape. However, the construction of this Teal index will enable us in the future to monitor the evolution of this trend in France or compare the state of evolution of several countries.

More specifically, the degree of adoption of each Teal practice may be of interest for several reasons: it gives an overview of the practices that may be more or less acceptable, more or less challenging or disruptive in the current time in France; it also provides valuable insights to select the practices that could be first introduced in a company willing to make its culture evolve, and possibly set out a transformation roadmap to introduce practices progressively, ensuring step-by-step internalization in a commitment process.

However, contrary to our Hypothesis H2, Teal practices are not direct drivers of work engagement. We identified only two significant predictors of engagement in our results: social openness and organizational trust. A second round of analyses suggested that Teal practices may contribute to organizational trust, which in turn determines work engagement. This set of findings inspires us two comments: firstly, introducing practices may not be sufficient to shape an organization towards Teal stage. This finding seems reasonable as practices may only be the external observable manifestations of a deeper corporate philosophy. Practices without the underlying philosophy could result in an empty inauthentic shell and be qualified of 'purpose washing' (Findlay and Moran, 2019). Secondly, to further understand the mechanisms of work engagement, it appears necessary to capture this Teal philosophy by itself, beyond its manifestation through practices. This calls for further development of a tool to measure for example the existence, place and role of an evolutionary purpose in the organization (main foundation of the Teal paradigm). The evolutionary purpose makes explicit the Why of the organization, its contribution to society, to world's or humanity's challenges. The social-openness variable, which proved to be a significant driver of engagement, measures organizational willingness to gain social and societal progress. To some extent, social openness could be considered as an indirect measure of the existence of an evolutionary purpose in the organization. Our Teal index and social openness variables do correlate strongly and positively indeed ($r = 0.44$, $p < 0.001$). The evolutionary purpose, its implementation into practices and its use in everyday decision-making, may provide a strong motivational framework to the members of the organization and support meaningfulness at work. In this respect, it could appear to be a direct driver of work engagement, together with trust and social openness.

In addition to formalizing an evolutionary purpose and introducing innovative organizational practices, another driver of both the Teal stage of evolution, organizational trust and work engagement may be the transformational leadership style. Our results emphasize that it strongly correlates to the Teal index, is the main driver of organizational trust, and marginally increases work engagement. This leadership style mainly relies on an inspiring and optimistic long-term vision (analogous to an evolutionary purpose) and on the autonomy to let each one find how to contribute to achieving this vision (analogous to self-management in the Teal paradigm). Both from a conceptual viewpoint and from our study results, we may recommend developing this leadership style in order to implement a modern, healthy and responsible work environment.

The present study holds several limitations feeding our perspectives for future research. Firstly, the cross-industry section method relies on a single measurement point for each participating company. Despite statistical consistency that can be checked at the sample level, this method is insufficient to interpret the results at the company level. It can only be used to gain an overview of a phenomenon and assess big trends. Several complementary approaches exist to study more accurately the drivers of engagement in a given company, for example case studies in which many members of the same organization express their engagement level along with their individual perception of organizational and managerial factors. The latter method provides a more accurate view on a single organization, but the mechanisms identified cannot be generalized to other companies.

The present study also highlighted several limitations in our measurement tools: in the future, we will be able to deepen our analysis by focusing on the most important variables and removing those which may not be influential on work engagement. In particular, we intend to use a more fine-grained measure of organizational trust, develop a tool measuring the existence and weight of an evolutionary purpose, in a Teal sense, and assess its impact on trust, motivation and engagement at work.

The joint study of motivational and engagement processes at the individual level and of organizational factors at the company level may help us capture the core mechanisms contributing to the transformation of the workplace towards more wellbeing at work, meaningful contribution to society and more positive impact on the world, which all characterize the Teal paradigm.

References

- Avolio, B.J. and Bass, B.M. (2001) *Developing potential across a full range of Leadership Tm: Cases on transactional and transformational leadership*. Psychology Press.
- Bass, B.M. (1990) 'From transactional to transformational leadership: Learning to share the vision', *Organizational dynamics*, 18(3), pp. 19–31.
- Bass, B.M. et al. (2003) 'Predicting unit performance by assessing transformational and transactional leadership.', *Journal of applied psychology*, 88(2), p. 207.
- Beck, D.E. and Cowan, C. (1996) *Spiral Dynamics: Mastering Values, Leadership and Change*. Blackwell Publishers Inc. Malden, MA.
- Boudrias, J.-S., Brunelle, E. and d'Amours, L. (2015) 'Qui sont les leaders transformationnels?', *Revue Internationale de Gestion*, 40(2), pp. 27–29.
- Cameron, K.S. and Quinn, R.E. (2011) *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*. 3e édition. Jossey-Bass.
- Cooke, R.A. and Szumal, J.L. (2000) 'Using the organizational culture inventory to understand the operating cultures of organizations', *Handbook of organizational culture and climate*, 4, pp. 1032–1045.
- Csikszentmihalyi, M. (1990) 'Flow', *The psychology of optimal experience*, pp. 1–22.
- Gallup (2013) *State of the Global Workplace*. Available at: <http://www.gallup.com/services/176735/state-global-workplace.aspx> (Accessed: 4 February 2016).
- Gallup (2023) *State of the Global Workplace*.
- Graves, C.W. (1970) 'Levels of existence: An open system theory of values', *Journal of humanistic psychology*, 10(2), pp. 131–155.
- Hersey, P. and Blanchard, K.H. (1969a) 'Life cycle theory of leadership.', *Training & Development Journal* [Preprint].
- Hersey, P. and Blanchard, K.H. (1969b) 'Management of organizational behavior: Utilizing human resources'. Academy of Management Briarcliff Manor, NY 10510.
- Hollet, S. (2005) 'Une validation de l'échelle d'engagement au travail (UWES-Utrecht Work Engagement Scale) auprès d'une population de commerciaux: l'antithèse positive de l'épuisement professionnel', in *Présenté à 16ème Conférence de l'AGRH, Paris*. Consulté à l'adresse <http://www.reims-ms.fr/agrh/docs/actes-agrh/pdf-des-actes/2005hollet082.pdf>.
- Inglehart, R. (2018) *Culture Shift in Advanced Industrial Society*. 1990th edn. Princeton University Press.
- Kruse, K. (2013) 'What is leadership', *Forbes magazine*, 3.
- Laloux, F. (2014) *Reinventing Organizations: A Guide to Creating Organizations Inspired by the Next Stage in Human Consciousness*. 1er édition. Brussels: Nelson Parker.

- Litwin, G.H. and Stringer, R.A. (1968) 'Motivation and organizational climate'.
- Martín-Castilla, J.I. and Rodríguez-Ruiz, Ó. (2008) 'EFQM model: knowledge governance and competitive advantage', *Journal of intellectual capital* [Preprint].
- Meirovich, G. and Gu, J. (2015) 'Empirical and theoretical validity of Hersey–Blanchard's contingency model', *Journal of Applied Management and Entrepreneurship*, 20(3), pp. 56–73.
- Motyka, B. (2018) 'Employee engagement and performance: a systematic literature review', *International Journal of Management and Economics*, 54(3), pp. 227–244.
- O'Reilly III, C.A., Chatman, J. and Caldwell, D.F. (1991) 'People and organizational culture: A profile comparison approach to assessing person-organization fit', *Academy of management journal*, 34(3), pp. 487–516.
- Rottemberg, G.E. (2021) *Pratiques managériales et engagement des salariés : une évolution qui passe par le sens*. Université de Paris.
- Schaufeli, W.B. (2013) 'What is engagement?', in *Employee engagement in theory and practice*. Routledge, pp. 29–49.
- Schaufeli, W.B. and Bakker, A.B. (2004) 'Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study', *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(3), pp. 293–315.
- Schaufeli, W.B., Bakker, A.B. and Salanova, M. (2006) 'The measurement of work engagement with a short questionnaire: A cross-national study', *Educational and psychological measurement*, 66(4), pp. 701–716.
- Šimleša, M. et al. (2018) 'The flow engine framework: A cognitive model of optimal human experience', *Europe's journal of psychology*, 14(1).
- Wilber, K. (2000) *A Theory of Everything: An Integral Vision for Business, Politics, Science and Spirituality*. Shambhala.

Empowering Changemakers: The Significance of Social Entrepreneurship as a Transversal Competency

Teresa Dieguez^{1,2}, Paula Loureiro¹, Isabel Ferreira¹ and Mario Basto¹

¹ Polytechnic Institute of Cávado and Ave, Portugal

² Universidade Aberta, Portugal

tdiegue@ipca.pt

Abstract: Social entrepreneurship is a powerful driver of positive change, allowing individuals to address social and environmental issues through innovative and sustainable business models. This approach requires a deep understanding of social challenges, strong business expertise, and collaboration to achieve common goals. Transversal skills like critical thinking, communication, teamwork, and problem-solving are essential and applicable across various industries and roles. By embracing digital transformation, social entrepreneurship can be further amplified, enabling the creation of new products, streamlined operations, and expanded outreach to diverse audiences. Staying well-informed about digital tools and technologies is vital for social entrepreneurs to effectively achieve their impact goals. This study focuses on evaluating students' perceptions of the relevance of their current training in acquiring skills sought after in the market, particularly in the context of social entrepreneurship. It also seeks to understand students' expectations for their professional future. Conducted at the Polytechnic Institute of Cávado and Ave in Portugal, the research utilized two questionnaires based on 21st-century competencies and the Profile of the Social Entrepreneur to collect data. The results of this empirical study hold significant potential for enhancing Higher Education. Identifying areas for improvement, such as curriculum redesign and innovative teaching approaches, can better equip students to address future challenges sustainably and responsibly. In an era of expanding digital transformation, it becomes increasingly vital to equip students with relevant skills and knowledge, enabling them to shape a better world through social entrepreneurship.

Keywords: Competencies, Entrepreneurship, Leadership, Higher education, Social entrepreneurship

1. Introduction

Scientific research on social entrepreneurship has revealed that there is no agreement on the specific definition or boundaries of the terms "social enterprise," "social entrepreneur," or "social entrepreneurship" (Dey & Lehner, 2017; Martin & Osberg, 2007; Nicholls 2010, Ranville & Barros, 2021). Defourny & Nyssens (2012) conducted a comparison of how the concept has evolved in the United States and Europe. They found that in Europe, the concept is closely tied to the third sector, cooperative tradition, and work integration social enterprises, which have been prominent in the political agenda of many European countries since the 1990s. In contrast, in the United States, it is primarily associated with activities within the non-profit sector that are motivated by social goals.

In fact, defining social enterprises and social entrepreneurship is challenging because they can operate in any sector and industry with diverse legal forms and ownership structures, including for-profit and non-profit entities (European Commission 2020). However, a common thread among them is their social mission, whether focused on environmental or social outcomes, prioritizing these goals over profit maximization. Economic values serve the purpose of achieving social objectives (Huybrechts & Nicholls, 2012; Rahdari et al., 2016), which means that the driving force behind their economic activities is to fulfil social goals, with profits largely reinvested back into the enterprise to further these purposes (Zahra & Wright, 2016).

Social entrepreneurship is closely tied to social innovation, influencing required competencies. One distinguishing feature of social enterprises is their management based on democratic and participatory principles, aiming for social justice (European Commission 2020). Understanding diverse definitions of social enterprises and social entrepreneurship is vital for planning education in this field (Myyrlyäinen, 2022). Learning objectives can be diverse, enhancing competencies and skills related to social entrepreneurship even for those not directly involved with social enterprises. However, competence is rooted in knowledge and a shared understanding of the phenomenon. Higher education should acknowledge the diversity of social enterprises and emphasize that defining them is an ongoing process (Bauwens et al., 2020; Ghafar, 2020). Definitions play a crucial role in positioning social enterprises in the field and market (Cheah et al., 2019; Cornelissen et al., 2021; Developing social entrepreneurship competencies requires understanding the nature of social enterprises in different countries. Nevertheless, competencies are context-dependent and linked to behavior, attitudes, and values (Lavrinoviča, 2021; Yoon et al., 2020).

Given the growing impact of digital transformation on people lives, this study aims to assess students' perceptions of the usefulness of their current training in acquiring the desired skills by the market and related

to social entrepreneurship. It also aims to understand what their expectations are regarding their professional future. It focuses its research on the study of the perceptions of students at the Polytechnic Institute of Cávado and Ave, based in Portugal. For the empirical study, it will be used two questionnaires, one based on 21st-century competencies and another one on the Profile of the Social Entrepreneur. Results may provide a basis for improvements and innovations in Higher Education, namely considering the redesign of some curricula or pedagogies to overcome challenges and prepare students to be more sustainable and aware in the future.

Following this introductory note, section 2 presents the theoretical framework resulting from the literature review. Section 3 presents the research design. The discussion of the results is presented in section 4 and, finally, in section 5 the conclusions are presented.

2. Literature Review

Innovation is vital for organizations in the knowledge society (Paavola et al., 2023), enabling the development of solutions and sustainable practices (Sivam et al., 2019). No more is expected to work alone, and open innovation has emerged as a concept where diverse sources are used for product, service, and process development (Chesbrough, 2003). Universities play a key role as knowledge transfer partners, contributing to regional development through scientific publications, patents, and collaborations (Dieguez, 2020; Dieguez et al., 2020; Leon & Martinez, 2016). Multidisciplinary teams foster open innovation, leading to innovative products and solutions (Ramírez-Montoya et al., 2018). However, open innovation is less explored in academic and cultural contexts compared to business and social fields, warranting further research (García-Peñalvo et al., 2019).

University innovation is evolving towards academic entrepreneurship, with new teaching methods encouraging collaboration between teachers and external sectors (Dieguez et al., 2022a; Dieguez et al., 2023). All disciplines, including social sciences, humanities, and arts, engage in entrepreneurship activities with formal (licenses and patents) and informal impacts (research and consultancy by agreement or public workshops or conferences, among others) (García-Peñalvo et al., 2019). Due to the crucial impact of the university on the community's improvement and innovation, its linkage with external agents allows for knowledge transfer and technology sharing, benefiting economic and social development in a quadruple helix model. The university's role in cooperation processes with industry and research centers contributes to innovation performance (Thomas et al., 2021).

Higher education institutions can develop entrepreneurship competencies through university linkage, promoting innovative and socially oriented projects (Ankrah et al., 2015; Kumari et al., 2019). Being social entrepreneurship an emerging and consolidated field that combines social and financial objectives with community ideals and innovation to generate value, education on social entrepreneurship is crucial for empowering individuals to make a positive social and environmental impact through innovative business models (Kickul & Lyons, 2020; Seelos & Mair, 2005). This type of education goes beyond conventional business training, fostering a deep understanding of social issues and the importance of sustainable development (Saebi et al., 2019).

In fact, it encompasses several key aspects among which: i) awareness of the various social and environmental challenges faced by communities and the planet (Arend, 2021, ii) development of creative and sustainable business models that go beyond mere profit-making (Tykkyläinen & Ritala, 2021), iii) improvement of essential transversal skills, such as critical thinking, communication, collaboration, and problem-solving (Ramírez-Montoya et al., 2021), iv) consciousness of the importance of ethical practices, responsible leadership, and accountability towards all stakeholders (Anh et al., 2022), and v) sustainability as a core principle for any venture project or act in life (Tien et al., 2023).

The future demands new skills that will significantly impact the foundations of the education system (World Economic Forum, 2020). Entrepreneurship can serve as a means of transitioning from mere survival to thriving (Devece et al., 2016), and Higher Education Institutions (HEIs) can now fulfill their mission of teaching entrepreneurship (Maritz, et al., 2020). However, the primary focus of most entrepreneurship education lies in developing entrepreneurial skills (Dieguez, 2017), which, as described by Lans, Blok, and Wesselink (2014), encompass non-cognitive entrepreneurial skills, and cognitive entrepreneurial skills. The present study incorporates both approaches to these competencies, and the following section elucidates the treatment of these skills.

3. Research Design

The research design of the scientific article involves evaluating students' perceptions regarding the relevance of their current training in acquiring market-desired skills, specifically in the context of social entrepreneurship. The study also aims to gain insights into students' expectations for their professional future. The research was conducted at the Polytechnic Institute of Cávado and Ave in Portugal.

In this context, from a positivist perspective, the observation of this phenomenon aims to collect data and analyze students' perceptions and experiences regarding the effectiveness of *curricula* and pedagogies in promoting the development of their soft and social skills. The analysis also aims to identify key competencies and potentially redesign some curricula or pedagogies to address challenges and better prepare students for success in the future. To achieve these objectives, a quantitative research approach with a descriptive nature is adopted, using a questionnaire for data collection (Farrokhnia et al., 2022; Grégoire et al., 2015), which is essential to identify clusters of students with similar entrepreneurial skills. The premise is that entrepreneurs and leaders take action to shape the future they envision by seizing opportunities aligned with their beliefs and aspirations (Donaldson, 2021). Their decisions for entrepreneurial value creation are influenced by emotions, perceptions of underlying realities, and their understanding of the potential consequences of their choices (Dieguez et al., 2023).

The population comprises students at the Polytechnic Institute of Cávado and Ave (IPCA). The instrument for data collection was designed by adapting two scales validated in the empirical and conceptual literature., namely the questionnaires based on: i) the 21st-century Competencies, proposed by Lans, Blok and Wesselink (2014) and later worked on by Dieguez, Loureiro, Ferreira and Basto (2022b); ii) the Profile of the Social Entrepreneur, presented by Garcia-González, Ramírez-Montoya, De León and Aragón (2020).

For this purpose, a questionnaire was prepared with 4 main areas namely socio-demographic data, students' perceptions about the competencies desired by the market, students' perceptions related to social entrepreneurship, and students' expectations related to professional future. It used a Likert scale from 1 to 5, representing from less to maximum levels. The questionnaire was sent by Google form in April and May 2023 and has been previously evaluated by 3 students and 2 academic experts. Data were collected in the early June of 2023 and, in the analysis, a total of 111 respondents were considered, which afforded valuable and relevant information. In this sense, the following section presents the results, firstly using a descriptive analysis and after a clustering algorithm.

4. Results

4.1 Socio-Demographic Data

The sample is composed of 111 students, representing 2% of all the students attending IPCA in June 2023. The female gender is the most represented in the survey, with 51 % of the answers. The great majority has between 18 and 30 years old (38%), even if there are students of all ages, as we can see in Figure 1.

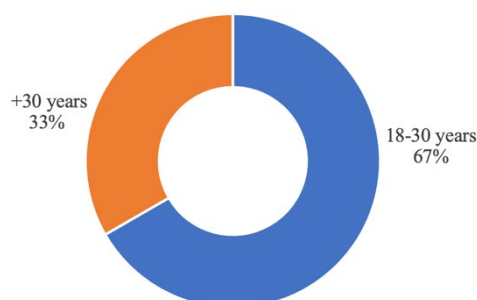


Figure 1: Age of respondents (own elaboration)

In what concerns professional experience, 70 % of the respondents have experience. The most frequent professional experience is between 1 and 6 years, representing 36%, followed by 34%, more than 6 years, as seen in Figure 2.

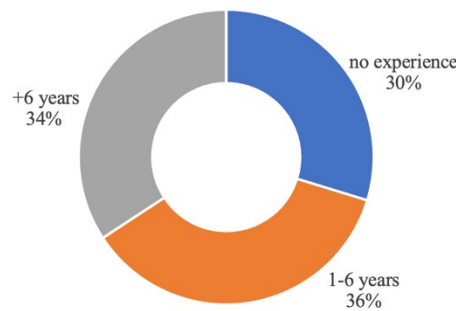


Figure 2: Professional experience (own elaboration)

4.2 Student's Perceptions and Expectations

To understand the student's perception regarding the relevance of their current training in acquiring the needed 21st-century skill, the main results are shown in Figure 3. Special attention is given to adaptability, with critical thinking and coordination with others, followed by time management, IT skills, analysis and decision-making, communication, and active listening. Results in accordance with Dieguez et al. (2022b).

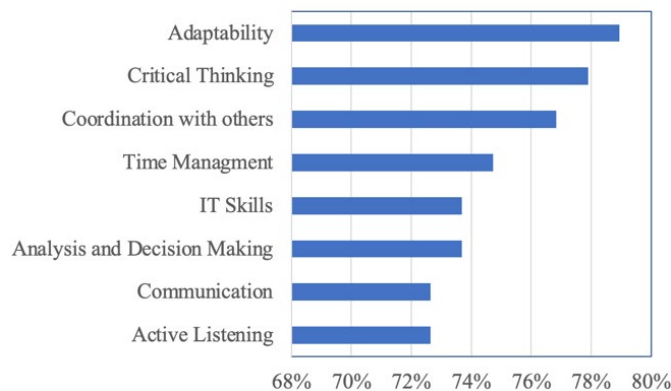


Figure 3: Needed 21st-century skill (own elaboration)

In what concerns the student's perception related to social entrepreneurship the main results are shown in figure 4. Knowledge to manage the administration comes first, followed by accounting and financial knowledge, tolerance to ambiguity or uncertainty, reliable information research, ability to achieve goals and steps, passion about working for social causes, passion about working and doing it as better as possible, actively collaborate in a team, and knowledge about the logistics of running an organization. These results are in accordance with Vázquez-Parra et al. (2023).



Figure 4 : Social Entrepreneur Profile (own elaboration)

Regarding expectations related to the professional future, most of the students intend to create their own jobs (24%), even if 22% of all the respondents desire to work for someone else. Pursuing an international career is

an intention for 20% of them and continuing with the same job seems to be an intention for 14% of the respondents.

In the sample collected, 35% have never thought about starting a business, but the vast majority (65%) have already considered doing so, as we can see in Figure 6.

For respondents who never thought of thinking about starting a business or working for themselves, the main reasons are linked to lack of financial capacity, right moment, lack of experience, no personal conditions, lack of management and leadership skills, fear of taking risks, lack of time to think seriously about it, and lack of support from those closest to them. Respondents who were willing to start their own business gave the following as their main reasons: extra income, realising a dream, need to be its own boss, business opportunity, the solution to a problem/need of the market/society and answer to an unemployment situation.

4.2.1 Classification of social entrepreneurial skills profiles using clustering algorithms

The research utilized cluster analysis to identify distinct profiles of individuals based on their perception of the relevance of their current training in acquiring job market skills, particularly in the context of social entrepreneurship. Cluster analysis groups cases together, maximizing similarity within each cluster while maximizing dissimilarity between clusters. K-means clustering, a popular technique, determines clusters based on proximity, with the number of clusters predetermined (Anderson, 2013; Kaufman & Rousseeuw, 2005).

The literature references the existence of two dimensions for 21st-century skills (Cognitive skills and non-Cognitive skills). A total of 19 questions in the actual study were used to assess the student's perceptions of those skills. A factor analysis identified one or two latent dimensions.

In addition, the 28 questions used to assess students' perceptions of social entrepreneurship were subjected to prior factorial analysis, and three latent variables (Driving, Consciousness, and Leadership) were identified. For each of the five dimensions, a score was assigned, based on the average of its constituent items, and these were the variables used in the subsequent cluster analysis.

The Bayesian Information Criterion (BIC) and the Akaike Information Criterion (AIC) acknowledge a 3-cluster solution if log-likelihood distance is used and a 2-cluster solution if Euclidean distance is used, as the optimal solution. Using Ward's method for hierarchical cluster analysis, the dendrogram suggests a solution with three clusters. The 3-cluster solutions obtained by hierarchical cluster analysis, two-step clustering, and k-means clustering were very similar, and the 3-cluster k-means solution proved to be more adequate in terms of interpretability. Also, the 3-cluster k-means solution was unaffected by the order of the cases. The silhouette metric suggests a good level of cohesion and separation. These results validate the 3-cluster k-means solution. The values of the centroids for each cluster are shown in Figure 5.

As can be seen, Cluster 3 negatively perceives the dimensions of non-Cognitive, Cognitive, and Driving. They are the smallest group with only 17 cases (15.3%) that perceive the skills of the 21st century as the worst and that, at the same time, perceive social entrepreneurship as the worst too. Cluster 2 is the largest with 52 cases followed by Cluster 1 with 42 cases. Cluster 1 is the one that best perceives skills, both 21st century and social (this cluster corresponds to 37.8% of respondents)

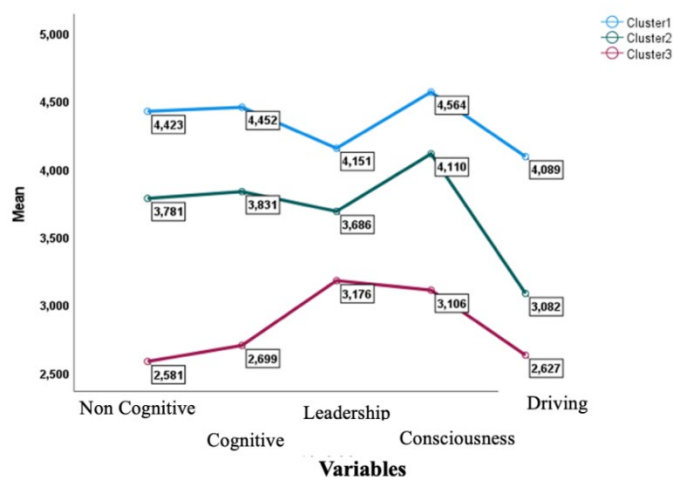


Figure 5: Centroids for each cluster

Based on such results, the following skills perceptions profiles were defined:

Cluster 1: Skill Awareness Embracers - students who actively engage in self-improvement and proactively seek opportunities to enhance their skill sets, aiming to make a meaningful difference in the social entrepreneurial landscape.

Cluster 2: Career Skill Seekers – Students are primarily focused on acquiring and developing the skills necessary for the job market. While they may also value consciousness and driving social impact, their main objective is to equip themselves with relevant abilities that align with their career aspirations in social entrepreneurship.

Cluster 3: Leadership Development Aspirants – Students prioritize effective leadership for driving social impact and success in social entrepreneurship. They value consciousness about social issues and aspire to become influential leaders, leading social ventures to success.

4.2.2 Differences among clusters

To find out whether gender, age, professional experience and the tendency to create its own business are connected to the perception of 21st-century skills and social entrepreneurship, the differences among clusters were studied. Table 1 resumes the findings. Only the professional experience was revealed to be significant to a 10% level ($p = 0.055$).

Table 1: Differences in some other variables among clusters

		Cluster 1	Cluster 2	Cluster 3	
Gender $p = 0.733$	Female	20 (35,1%)	27 (47,4%)	10 (17,5%)	57 (100,0%)
	Male	22 (40,7%)	25 (46,3%)	7 (13,0%)	54 (100,0%)
Age $p = 0.153$	18-30 years	24 (32,4%)	36 (48,6%)	14 (18,9%)	74 (100,0%)
	31 or more	18 (48,6%)	16 (43,2%)	3 (8,1%)	37 (100,0%)
Professional experience $p = 0.055$	No experience	6 (18,2%)	20 (60,6%)	7 (21,2%)	33 (100,0%)
	1-6 years	17 (42,5%)	16 (40,0%)	7 (17,5%)	40 (100,0%)
	7 or more	19 (50,0%)	16 (42,1%)	3 (7,9%)	38 (100,0%)
Own business $p = 0.585$	No	14 (32,6%)	21 (48,8%)	8 (18,6%)	43 (100,0%)
	Yes	28 (41,2%)	31 (45,6%)	9 (13,2%)	68 (100,0%)

Gender does not significantly influence the perception of 21st-century skills and social entrepreneurship. Older students (cluster 1) show a slightly better perception, though not statistically significant. No strong evidence links the tendency to establish a business with students' perceptions. Cluster 2 mainly consists of students with no professional experience, showing positive but less favorable perceptions than Cluster 1, where students with professional experience are prevalent ($p=0.055$). These results are in line with previous research from Cruz-Sandoval et al. (2022).

5. Conclusion

The study proposes three distinct student clusters with different perceptions of 21st-century skills and social entrepreneurship: Cluster 1) Skill Awareness Embracers (the most positive cluster where students are focused on self-improvement for social impact), Cluster 2) Career Skill Seekers (the largest group, with students primarily prioritizing job-relevant skills with consciousness of social impact), and Cluster 3) Leadership Development Aspirants (students aspiring to drive social change through effective leadership).

The study highlights the relevance of Higher Education in shaping students' perceptions of 21st-century skills and social entrepreneurship for their future. These qualities empower social entrepreneurs to navigate challenges, mobilize resources, and create meaningful change in pursuit of their social missions. In this research, professional experience shows a significant correlation between the perception of 21st-century skills and social entrepreneurship, and this highlights that the desire and passion for entrepreneurship is not enough and economic and administrative skills are also crucial to succeed. These insights can guide tailored educational approaches to support students' aspirations in social entrepreneurship. These findings possess academic significance by elucidating the capacity of educational interventions to shape the advancement of diverse competencies. Moreover, they unveil pragmatic pathways for universities equipped with entrepreneurship

programs and other entities engaged in collaboration with social entrepreneurs. This approach underscores the pedagogic value of social entrepreneurship, extending beyond its economic implications, to cultivate a spectrum of competencies. Students more than ever want to have a proactive role in their education and cocreation projects combined with active methodologies can be a way for Higher Education to prepare future leaders with the needed skills for sustainable development.

The main constraint of this research is the small sample size and the specific contextual setting, which may limit the identification of additional outcomes not emphasized in the initial approach. For future research it would be interesting to apply the same two scales, in a higher number of students, but comparing the students according to their academic background, professional experience and volunteering experience.

References

- Anderson, R. E. (2013). *Human Suffering and Quality of Life: Conceptualizing stories and statistics*. Springer Science and Business Media.
- Anh, D. B. H., Duc, L. D. M., Yen, N. T. H., Hung, N. T., & Tien, N. H. (2022). Sustainable development of social entrepreneurship: evidence from Vietnam. *International journal of entrepreneurship and small business*, 45(1), 62-76.
- Ankrah, S., & Omar, A. T. (2015). Universities–industry collaboration: A systematic review. *Scandinavian Journal of Management*, 31(3), 387-408.
- Arend, R. J. (2021). Modelling social entrepreneurship: Consideration of the reacting forces. *Journal of Social Entrepreneurship*, 12(3), 399-416.
- Bauwens, T., Huybrechts, B., & Dufays, F. (2020). Understanding the diverse scaling strategies of social enterprises as hybrid organizations: The case of renewable energy cooperatives. *Organization & Environment*, 33(2), 195-219.
- Cheah, J., Amran, A., & Yahya, S. (2019). External oriented resources and social enterprises' performance: The dominant mediating role of formal business planning. *Journal of Cleaner Production*, 236, 117693.
- Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press.
- Cornelissen, J. P., Akemu, O., Jonkman, J. G., & Werner, M. D. (2021). Building character: The formation of a hybrid organizational identity in a social enterprise. *Journal of Management Studies*, 58(5), 1294-1330.
- Cruz-Sandoval, M., Vázquez-Parra, J. C., & Alonso-Galicia, P. E. (2022). Student perception of competencies and skills for social entrepreneurship in complex environments: An approach with Mexican university students. *Social Sciences*, 11(7), 314.
- Defourny, J., & Nyssens, M. (2012). El enfoque EMES de la empresa social desde una perspectiva comparada. *Ciriec-España, revista de economía pública, social y cooperativa*, (75), 6-34.
- Devece, C., Peris-Ortiz, M. & Rueda-Armengot, C. (2016). Entrepreneurship during economic crisis: Success factors and paths to failure. *Journal of Business Research*, 69, 5366-5370.
- Dey, P., & Lehner, O. (2017). Registering ideology in the creation of social entrepreneurs: Intermediary organizations, 'ideal subject' and the promise of enjoyment. *Journal of Business Ethics*, 142, 753-767.
- Dieguez, T. (2020). The Role of Porto University in the Development of Entrepreneurial Ecosystem. *Journal of Business and Economics*, ISSN, 2155-7950.
- Dieguez, T. (2017). Empowering Hub. In *Handbook of Knowledge Integration Strategies for Entrepreneurship and Sustainability*, Ch. 16, 256-284. IGI Global.
- Dieguez, T., Ferreira, L. P., Silva, F. J., & Tjahjono, B. (2020). Open innovation and sustainable development through industry-academia collaboration: A case study of automotive sector. *Procedia Manufacturing*, 51, 1773-1778.
- Dieguez, T., Lima, S., & Conceição, O. (2023). Innovative Practices in Teaching Entrepreneurship: DEMOLA Approach. In *The Impact of HEIs on Regional Development: Facts and Practices of Collaborative Work With SMEs* (pp. 206-226). IGI Global.
- Dieguez, T., Loureiro, P., & Ferreira, I. (2022a, November). Enhancing Social Innovation through Active Methodologies in Higher Education. In *European Conference on Management Leadership and Governance* (Vol. 18, No. 1, pp. 122-130).
- Dieguez, T., Loureiro, P., Ferreira, I., & Basto, M. (2022b). Digital & Entrepreneurial Mindset Transformation. In *11th International Scientific Symposium Region, Entrepreneurship, Development* (Red 2022) (pp. 141-156).
- Dieguez, T., Sobral, T., & Conceição, O. (2023). Entrepreneurial intention acknowledgment in sustainable entrepreneurship, An exploratory study. *Journal of Innovation Management*, 11(2).
- Donaldson, C. (2021). Culture in the entrepreneurial ecosystem: A conceptual framing. *International Entrepreneurship and Management Journal*, 17(1), 289-319.
- European Commission (2020) *Social enterprises and their ecosystems in Europe. Comparative synthesis report*. Authors: Carlo Borzaga, Giulia Galera, Barbara Franchini, Stefania Chiomento, Rocío Nogales and Chiara Carini. Luxembourg: Publications Office of the European Union. Available at <https://europa.eu/!Qq64ny>
- Farrokhnia, M., Baggen, Y., Biemans, H., & Noroozi, O. (2022). Bridging the fields of entrepreneurship and education: The role of philosophical perspectives in fostering opportunity identification. *The International Journal of Management Education*, 20(2), 100632.

- García-González, A., Ramírez-Montoya, M. S., De León, G., & Aragón, S. (2020). El emprendimiento social como una competencia transversal: construcción y validación de un instrumento de valoración en el contexto universitario. *Revesco*, 136, 1-16.
- García-Peñalvo, F. J., García-Holgado, A., & Ramírez-Montoya, M. S. (2019, October). Track 16: TEEM 2019 doctoral consortium. In *Proceedings of the Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality* (pp. 920-924).
- Ghafar, A. (2020). Convergence between 21st century skills and entrepreneurship education in higher education institutes. *International Journal of Higher Education*, 9(1), 218-229.
- Grégoire, S., Lachance, L., & Taylor, G. (2015). Mindfulness, mental health and emotion regulation among workers. *International Journal of Wellbeing*, 5(4).
- Huybrechts, B., & Nicholls, A. (2012). Social entrepreneurship: Definitions, drivers and challenges. *Social entrepreneurship and social business: An introduction and discussion with case studies*, 31-48.
- Kaufman, L. & Rousseeuw, P.J. (2005). *Finding Groups in Data: An Introduction to Cluster Analysis*. John Wiley and Sons.
- Kickul, J., & Lyons, T. S. (2020). *Understanding social entrepreneurship: The relentless pursuit of mission in an ever changing world*. Routledge.
- Kumari, R., Kwon, K. S., Lee, B. H., & Choi, K. (2019). Co-creation for social innovation in the ecosystem context: The role of higher educational institutions. *Sustainability*, 12(1), 307.
- Lans, T., Blok, V., & Wesselink, R. (2014). Learning apart and together: towards an integrated competence framework for sustainable entrepreneurship in higher education. *Journal of Cleaner Production*, 62, 37-47.
- Lavriniči, B. (2021). Transdisciplinary Learning: From Transversal Skills to Sustainable Development. *Acta Paedagogica Vilnensia*, (47), 93-107.
- Leon, G., & Martinez, R. (2016). Q. How Can a University Drive an Open Innovation Ecosystem?. *Technology Innovation Management Review*, 6(7), 48-51.
- Maritz, A., Perenyi, A., de Waal, G. & Buck, C. (2020). Entrepreneurship as the Unsung Hero during the Current COVID-19 Economic Crisis: Australian Perspectives. *Sustainability*, 12, 4612.
- Martin, R. L., & Osberg, S. (2007). *Social entrepreneurship: The case for definition*. Stanford Social Innovation Review, Spring 2007.
- Myrskyläinen, H. (2022). Educating social entrepreneurship competences in the higher education: Towards collaborative methods and ecosystem learning. The Publication Series of LAB University of Applied Sciences, part 44. Lappeenranta, 2022.
- Nicholls, A. (2010). The legitimacy of social entrepreneurship: Reflexive isomorphism in a pre-paradigmatic field. *Entrepreneurship theory and practice*, 34(4), 611-633.
- Rahdari, A., Sepasi, S., & Moradi, M. (2016). Achieving sustainability through Schumpeterian social entrepreneurship: The role of social enterprises. *Journal of Cleaner Production*, 137, 347-360.
- Ramírez-Montoya, M. S., García-Peñalvo, F. J., & McGreal, R. (2018). Shared science and knowledge. *Comunicar*, 26(54), 1-5.
- Ramírez-Montoya, M. S., Loaiza-Aguirre, M. I., Zúñiga-Ojeda, A., & Portuguese-Castro, M. (2021). Characterization of the Teaching Profile within the Framework of Education 4.0. *Future Internet*, 13(4), 91.
- Ranville, A., & Barros, M. (2021). Towards normative theories of social entrepreneurship. A review of the top publications of the field. *Journal of Business Ethics*, 1-32.
- Saebi, T., Foss, N. J., & Linder, S. (2019). Social entrepreneurship research: Past achievements and future promises. *Journal of management*, 45(1), 70-95.
- Seelos, C., & Mair, J. (2005). Social entrepreneurship: Creating new business models to serve the poor. *Business horizons*, 48(3), 241-246.
- Sivam, A., Dieguez, T., Ferreira, L. P., & Silva, F. J. (2019). Key settings for successful open innovation arena. *Journal of Computational Design and Engineering*, 6(4), 507-515.
- Tien, N. H., Tien, N. V., Mai, N. P., & Duc, L. D. M. (2023). Green entrepreneurship: a game changer in Vietnam business landscape. *International journal of entrepreneurship and small business*, 48(4), 408-431.
- Thomas, E., Faccin, K., & Asheim, B. T. (2021). Universities as orchestrators of the development of regional innovation ecosystems in emerging economies. *Growth and change*, 52(2), 770-789.
- Tykkyläinen, S., & Ritala, P. (2021). Business model innovation in social enterprises: An activity system perspective. *Journal of Business Research*, 125, 684-697.
- Vázquez-Parra, J. C., Carlos-Arroyo, M., & Cruz-Sandoval, M. (2023). Social Entrepreneurship and Complex Thinking: Validation of SEL4C Methodology for Scaling the Perception of Achieved Competency. *Education Sciences*, 13(2), 186.
- World Economic Forum (2020). *The Future of Jobs Report 2020*. <https://www.weforum.org/reports/the-future-of-jobs-report-2020>.
- Yoon, E., Cabirou, L., Galvin, S., Hill, L., Daskalova, P., Bhang, C., ... & Baltazar, B. (2020). A meta-analysis of acculturation and enculturation: Bilinear, multidimensional, and context-dependent processes. *The Counseling Psychologist*, 48(3), 342-376.
- Zahra, S. A., & Wright, M. (2016). Understanding the social role of entrepreneurship. *Journal of management studies*, 53(4), 610-629.

Exploring Team Role Typologies and Taxonomies: A Systematic Literature Analysis

Vít Dočekal

Palacký University Olomouc, Czech Republic

vit.docekal@upol.cz

Abstract: The field of team role typologies and taxonomies is characterized by a lack of conceptual clarity and dominance of a single primary source. This study aims to shed light on the relationships between authors of team role typologies/taxonomies by conducting a systematic literature analysis. The focus is on analyzing authors listed in articles specifically addressing team roles. The resulting analysis provides a list of authors of typologies or taxonomies of team roles as a preparation for further phases of our research. The methodology employed involves a literature review. The selection of articles was based on the Scopus database, with additional searches conducted on publisher websites and ResearchGate to ensure comprehensive coverage. Advanced lexical search software facilitated the identification of authors associated with typologies and taxonomies. The study presents a waypoint list of probably relevant authors for further analysis. Furthermore, the potential of AI tools in literature review and the use of applications for creating schematic maps based on bibliographic records are discussed, with a promise of further investigation in future studies. Overall, this study provides a comprehensive summary of authors involved in the development of team role typologies and taxonomies, providing a foundation for future research to validate and expand upon the identified author relationships. It emphasizes the need to explore the diverse approaches in this field, while also recognizing the significant influence of seminal figures such as M. Belbin. By unraveling the complexities of author relationships, this study paves the way for deeper insights into team dynamics and roles within organizations.

Keywords: Team role typologies, Team role taxonomies, Systematic literature analysis, Literature review, MAXQDA, AI tools

1. Introduction

The field of team role typologies and taxonomies suffers from poor conceptualization, with one primary source dominating for reproduction and critical reflection. However, there are numerous models, varying in size and composition, created by different groups of authors. To shed light on the relationships between these approaches and enable further analysis of the team role typologies/taxonomies, we conducted a systematic literature analysis of authors identified in the Scopus database who have contributed to partial approaches. This study aims to examine the relationships among authors of team role typologies and taxonomies as documented in articles focused on team roles. The outcome of this analysis is a relational map that identifies clusters of authors. Regrettably, due to the constraints of this article's scope, we are unable to present the comprehensive map of authors' relationships that emerged in the second phase of our analysis. However, we anticipate publishing a separate research paper dedicated specifically to showcasing and analysing the intricate web of connections between the authors identified in our study. This map of authors' relationships promises to provide valuable insights into the interplay and collaborations within the field of team role typologies and taxonomies. By delving deeper into these relationships, we can gain a more nuanced understanding of the scholarly landscape and the evolution of ideas in this area.

Prior to delving into the subsequent topic, it is essential to provide an elucidation of the differentiation between typology and taxonomy. Smith (2002) provides a comprehensive distinction supported by academic references, highlighting the difference between typologies and taxonomies. According to Smith, typologies are based on dimensions that represent specific concepts or mental constructs rather than being derived from objective analysis of empirical data. On the other hand, taxonomies are built on measurable and empirically observable characteristics. In line with Smith's distinction, team role systems that are developed as mental constructs can be categorized as typologies, as they rely on conceptual dimensions. Conversely, approaches that construct team role structures based on observable and measurable characteristics can be considered taxonomies. These taxonomies categorize individuals into roles based on empirical data and measurable criteria. By acknowledging the differences between typologies and taxonomies, researchers can adopt an appropriate framework for studying and understanding team roles, considering whether their focus is on mental construct and theoretical dimensions or empirical observations.

When exploring team role typologies and taxonomies, it is essential to consider prominent authors who serve as foundational pillars in the research conducted by their successors. Meredith R. Belbin stands out as one of the key figures in this field, both in terms of conceptualization and citation impact (see below). Numerous

authors have elaborated on, verified, or challenged the validity of Belbin's model (e.g., Broucek & Randell 1996; Dulewicz 1995a; Fisher et al. 2001; Furnham et al. 1993; Prichard & Stanton 1999; Senior 1998), and his concept continues to inspire and provoke thought. Belbin's model is founded on the distinction between team roles and functional roles. A team role represents a set of behaviours that contribute to the team's progress, with these behaviours falling within a finite range and forming interrelated clusters known as team roles. On the other hand, a functional role is determined by the job requirements, and the worker performs specific duties based on relevant competencies (Belbin & Brown 2022). Aritzeta (2005) delves further into the differentiation between positional roles in the organizational structure and team roles, describing the latter as a negotiation process between individual competencies and the team's needs, shaping the way each team member adapts by assuming a specific team role (Aritzeta 2005, p. 159). Margerison (2001) presents an alternate perspective on team roles, highlighting the importance of team competencies—enabling teams to succeed—rather than solely focusing on the expected behaviours associated with general roles. Efforts have also been made to establish links between different typologies and taxonomies. For instance, Driskell et al. (2017) attempt to integrate numerous team role descriptions within the research literature by categorizing them into three fundamental dimensions: dominance, sociability, and task orientation. Another approach involves classifying roles based on criteria such as influence, function, and contribution (Fujimoto 2016).

Establishing a theoretical foundation in team role models poses significant challenges. Notably, there is a lack of clear development pathways for theories by individual authors. Many authors rely on the widely recognized concept introduced by M. Belbin. They either apply it to specific team studies, validate its applicability, or construct their own team role concepts, often including redefined individual roles based on criticisms of the original concept. The complexity is further compounded by the interdependence among authors and their search for unique influences that shape each author's perspective on team roles and their taxonomies. Therefore, the objective of this research was to analyse the relationships among authors who have presented team role typologies and taxonomies in articles centred on team roles. The outcome of this analysis will be a relational map that visualizes clusters of authors and their interrelationships which will be published in a subsequent paper.

2. Methodology

The methodology employed in this research consisted of a literature review followed by an analysis of author relationships using systematic literature mapping. Soaita et al. describe systematic literature mapping as "a valuable tool for comprehending the structure of a particular topic" (Soaita et al. 2020, p. 338). In the initial phase, we followed the six work phases proposed by Kuckartz and Rädiker (2019) for creating a literature review based on literature search:

- Formulation of research questions and objectives of the review.
- Selection of appropriate bibliographic databases.
- Determination of relevant search terms within these databases.
- Application of practical and methodological criteria for the selection of articles.
- Conducting the literature review.
- Synthesizing the results and writing the review.

Once the aim of the study and the research question, "What does a network of author relationships based on shared authorship between authors dealing with team role typologies/taxonomies look like?" were established, we proceeded with the selection of the database. For the initial phase, we chose Scopus as the primary source. We conducted a search for articles using the keyword/association "team roles." Scopus was deemed appropriate due to its extensive coverage and relevant search tools. The selected keyword/phrase was intentionally broad to encompass articles that may not solely focus on typologies/taxonomies but address them within the broader context of their research objectives. The resulting 165 articles obtained from this search satisfied the requirements for a comprehensive literature review and fell within the recommended range of tens to hundreds of papers suitable for content analysis, as suggested by Kraus et al. (2022). No additional filter (e.g. time range) had to be applied to the list of sources.

In consideration of our previous experiences, it became apparent that a substantial number of articles behind paywalls in databases were inaccessible for regular low-cost research. Therefore, we applied our evaluation criteria exclusively to the final set of available and downloaded full-text articles. We obtained the article corpus primarily through access to the Scopus database, and for the subsequent step, we conducted searches on publishers' websites using Zotero and manual searching (leveraging institutional access to various

databases). Additionally, we utilized the ResearchGate network, where freely available texts were identified, or requests for sharing were made, leading to access granted in several cases. This dedicated effort, combined with abstract filtering, resulted in a final set of 104 articles for further analysis.

Next, we conducted an extensive search within the texts to identify authors associated with each team role typology or taxonomy. To facilitate this step, we employed the advanced lexical search in MAXQDA 2018 software. Our query encompassed all the papers and targeted passages (along with their surrounding content) that mentioned terms such as "team role," "typolog*," "taxonom*," "definition" and various combinations thereof. The asterisk (*) sign is used to expand search results. The asterisk serves as a wildcard character in search queries, allowing the software to retrieve variations of a word that have the same base but different forms. Using the asterisk allows the software to search for both the term "team role" and "team roles," as well as "typologies" and "taxonomies," and so on. This helps to capture a broader range of relevant results and ensure a more comprehensive search.*

This initial labelling of text sections aided in navigating the articles more efficiently. We then tagged authors who were recognized as the authors of specific typologies or taxonomies in the prepared documents. Initially, there were 30 such authors (though this number was subsequently reduced for closer examination of the texts). The frequency of codes associated with different authors' names within each text ranged from 2 to 221 occurrences. This paper focuses on presenting the data and findings derived from this level/step of analysis. The subsequent steps of the research described in this chapter below, including further data analysis and additional findings, are intended to be shared in future publications. These future publications will delve deeper into the subject matter and provide a more comprehensive understanding of the research topic. This study provides an initial list of resources and their preliminary analysis for further development of this topic. The decision to present the results of the subsequent steps in separate publications is aimed at ensuring a thorough and detailed exploration of the research findings.

These authors' names were employed as keywords for an advanced lexical search using MAXQDA 2018. The software identified approximately 2,400 passages tagged with authors' names as the primary search string. While it is important to note that a considerable portion of these segments did not contribute new information and consisted of authors' names in publication headings and references, the search nevertheless revealed a substantial number of crucial text segments that will serve as the basis for analysing specific approaches in future research.

Key publications on which the mapping of authors' relationships is based have been cited and highlighted. There were a total of 142 such publications. A detailed content analysis of these sources will likely be the next step in future studies. From this list, we proceeded to map the relationships between individual authors by examining the chains of relationships between the first and second authors. Only second and subsequent authors who appeared in a single author's publications and did not contribute to connecting other publications were excluded from the final map.

Due to the complexities involved in weighting various passages, we do not present the results of the quantitative analysis of frequency extensively in this paper. The uneven distribution of self-citations among authors, particularly in follow-up research, posed challenges to meaningful quantitative analysis. Therefore, quantitative results are not particularly relevant for demonstrating relationships. Quantitative analysis of this kind could only provide false information about the network of relationships hidden behind the exaggerated self-citation patterns of some of the authors. For the schematic map provided below, each author was counted only once.

It is important to note that we did not include Meredith Belbin's approach in the analysis for several reasons. First, there was a significant number of coded segments related to Belbin's typology during the middle part of the analysis (the semantic search flagged over 1,000 passages referencing Belbin's typology, accounting for approximately 40% of all coded segments). The imbalance between the number of these references and references in more recent works like "Team Roles at Work" (Belbin & Brown 2022), which may have included reflections on other studies, or the limited number of available publications where Belbin built upon the ideas of other authors, played a decisive role in this decision. Thus, our focus was on academically organic, interconnected, or lesser-known authors. It is worth noting that the vast majority of these authors mention Belbin's theory in some way, reflecting its influence.

3. Results

In Table 1, we present the authors we identified as authors of typologies/taxonomies in the original articles downloaded from the Scopus database. Typically, one author's name is provided in the text, while two authors are listed if the linked publications were solely authored by them. After careful examination, some codes were removed, resulting in approximately 1,700 remaining coded segments. We chose to preserve these segments in the code set to address any uncertainties that may arise. In future research, we intend to conduct a thorough examination to determine whether the concepts presented by the authors constitute typologies or taxonomies. Additionally, authors who demonstrated inconsistencies with the theme and goal of the analysis were eliminated from the code list.

Table 1: List of authors of typologies/taxonomies

Ancona et al (e.g. 1992)	Bales (Bales, 1950)	Barry (D. Barry, 1991)
Beck (1989)	Belbin (e.g. Belbin & Brown, 2022)	Benne & Sheats (Benne & Sheats, 1948)
Bittner (e.g. 1992)	Burke (e.g. 2006)	Davis (1992)
De Vreede (2019)	Driskell T (e.g. 2017)	DuBrin (e.g. 1995)
Driskell JE (e.g. 2006)	Dulewicz (1995)	Fujimoto (2016)
Gander (e.g. 2018)	Gutiérrez (2019)	Hare (e.g. 1973)
Hollenbeck (e.g. 2012)	Lehmann-Willenbrock (e.g. 2016)	Manning (2013)
Margerison (e.g. 1986)	Moreno (1934)	Mumford (2008)
Mathieu (e.g. 2015)	Nestsiarovich & Pons (e.g. 2018)	Parker GM (1990)
Parker SK (e.g. 1998)	Platt (2016)	Ruch (e.g. 2018)
Stempfle (2001)	Stewart (Stewart, 2000)	Wiggins (e.g. 1979)

The subsequent step involved identifying references within the refined set of documents, which comprised 76 out of the original 165 (after the initial correction, the number was reduced to 104) articles. Within each document, we searched for references to articles that the authors believed contained the description/definition of the typology/taxonomy. These sources were compiled into a database, which was then analysed for relationships based on co-authorship. The resulting schematics illustrating the relationships between authors in team role typologies and taxonomies will be published in the next article, providing valuable insights into collaborative networks within the research community.

4. Discussion

The results of this study highlight the diverse range of approaches to team roles. While further exploration and validation are necessary, a significant number of authors exhibit originality in their work upon initial examination. Notably, M. Belbin emerges as a prominent figure who has greatly influenced the field, with each study citing him as a key source. However, we made a deliberate decision not to include Belbin's work in our further analyses in order to mitigate the dense network of references. The presented data also reveal a consistent emergence of new approaches to typologies and taxonomies of team roles since the 1980s.

The presented results serve as an initial exploratory input for further research on theories, concepts, and models of typologies and taxonomies. Similar to the findings of Soaita et al. (2020), systematic literature mapping can serve as an initial stage for more comprehensive evidence reviews.

However, as the limit of this study, we acknowledge that the list may not be perfect, and further examination may reveal some models as subsidiary or secondary to mainstream typologies and taxonomies. It is also possible that some research may have been overlooked in this analysis and can be discovered through a more in-depth exploration.

4.1 Methodological note

A final note pertains to the emerging practice of incorporating artificial intelligence (AI) into research, particularly in the field of literature review. In our parallel exploration of AI's potential in this research (where we compared the results obtained from AI tools to the results we had already acquired), we generally did not find qualitatively superior or more effective outcomes in the specific research area of this study. AI-powered text generation and search applications, such as ChatGPT, Petal, and Scite, provided inconclusive answers when responding to both simple and relatively complex search queries or question statements. The complexity of data processing by these tools still requires improvement. It is possible that the low significance of the AI results could be attributed to the inadequately formulated prompts (request/question statements), despite our attempts to refine or expand them. Another limitation is the ongoing issue of limited access to individual texts, which AI cannot retrieve without further screening of user profiles—a step that poses challenges even for human researchers. Such restricted access to scientific literature remains a significant obstacle for theoretical reviews, and it is possible that the results that were excluded due to inaccessibility in the subsequent steps were not reflected in the AI results.

In contrast, applications that enable the creation of schematic maps using bibliographic records and known references in both directions present a promising approach as a parallel or even primary solution for this type of research. These applications offer the potential to enhance our understanding of the field by visualizing the connections between authors and their works. In future research papers focusing on this field, these applications will be further explored and described in greater detail, highlighting their potential contributions to the study of team role typologies and taxonomies.

5. Conclusion

The topic of team roles, their typologies, and taxonomies has been widely explored in the literature. Many authors have adopted Belbin's model as a foundational framework, despite receiving criticism from some researchers. Belbin's model continues to serve as a strong starting point for research in this field. However, due to the lack of a comprehensive schema that outlines the various approaches, we undertook this study to provide a basic understanding of the relationships among authors and their contributions. Overall, this study provides a comprehensive summary of authors involved in the development of team role typologies and taxonomies, providing a foundation for future research to validate and expand upon the identified author relationships.

We acknowledge that the results of this research should be considered as preliminary findings and require further validation and additional information from future studies. Our aim is to contribute to the existing knowledge and provide a starting point for more in-depth investigations.

Future research endeavours will centre on elucidating the intricate network of relationships between individual authors by conducting a thorough analysis of author and co-author associations within individual publications. As a natural progression from this thesis, we will utilize the preliminary list of authors developed here to facilitate the construction of a more comprehensive relationship analysis in subsequent studies. By delving deeper into the collaborative patterns and connections among authors, we aim to advance our understanding of the dynamic authorship landscape and its implications for knowledge dissemination.

Overall, our work serves as a stepping stone for advancing the understanding of team roles, typologies, and taxonomies, and we encourage further exploration and refinement of these concepts.

Acknowledgements

The funding for the present publication was provided by the Czech Ministry of Education, Youth and Sports for specific research (IGA_FF_2023_033).

References

- Ancona, D. G. and Caldwell, D. F. (1992) "Bridging the Boundary: External Activity and Performance in Organizational Teams", *Administrative Science Quarterly*, Vol 37, No. 4, pp 634-665. <https://doi.org/10.2307/2393475>
- Aritzeta, A., Senior, B. and Swales, S. (2005) "Team Role Preference and Cognitive Styles: A Convergent Validity Study", *Small Group Research*, Vol 34, No. 4, pp 404-436. <https://doi.org/10.1177/1046496404273742>
- Bales, R. F. (1950) "A set of categories for the analysis of small group interaction", *American Sociological Review*, Vol 15, No. 2, pp 257-263. <https://doi.org/10.2307/2086790>

- Barry, D. (1991) "Managing the bossless team: Lessons in distributed leadership", *Organizational Dynamics*, Vol 20, No. 1, pp 31–47. [https://doi.org/10.1016/0090-2616\(91\)90081-j](https://doi.org/10.1016/0090-2616(91)90081-j)
- Beck, A. P., Eng, A. M. and Brusa, J. A. (1989) "The Evolution of Leadership During Group Development", *Group*, Vol 13, No. 3, pp 155–164. <https://doi.org/10.1007/bf01473148>
- Belbin, R. M. and Brown, V. (2022) *Team Roles at Work*, Routledge, London. <https://doi.org/10.4324/9781003163152>
- Benne, K. D. and Sheats, P. (1948) "Functional Roles of Group Members", *Journal of Social Issues*, Vol 4, No. 2, pp 41–49. <https://doi.org/10.1111/j.1540-4560.1948.tb01783.x>
- Bittner, E. A. C., Oeste-Reiß, S. and Leimeister, J. M. (2019) "HICSS - Where is the Bot in our Team? Toward a Taxonomy of Design Option Combinations for Conversational Agents in Collaborative Work", *Proceedings of the Annual Hawaii International Conference on System Sciences*, pp 1–10. <https://doi.org/10.24251/hicss.2019.035>
- Broucek, W. G. and Randell, G. (1996) "An assessment of the construct validity of the Belbin Self-Perception Inventory and Observer's Assessment from the perspective of the five-factor model", *Journal of Occupational and Organizational Psychology*, Vol 69, No. 4, pp 389–405. <https://doi.org/10.1111/j.2044-8325.1996.tb00625.x>
- Burke, C. S. S., Kevin C., Klein, C., Goodwin, G. F., Salas, E., Halpin, S. M. (2006) "What type of leadership behaviors are functional in teams? A meta-analysis", *The Leadership Quarterly*, Vol 17, No. 3, pp 288–307. <https://doi.org/10.1016/j.leaqua.2006.02.007>
- Davis, J. (1992) *Successful team building: How to create teams that really work*, Kogan Page.
- de Vreede, G.-J. and Briggs, R. O. (2019) "A Program of Collaboration Engineering Research and Practice: Contributions, Insights, and Future Directions", *Journal of Management Information Systems*, Vol 36, No. 1, pp 74–119. <https://doi.org/10.1080/07421222.2018.1550552>
- Driskell, J., E., Goodwin, G. F., Salas, E. and O'Shea P. G. (2006) "What makes a good team player? Personality and team effectiveness", *Group Dynamics: Theory, Research, and Practice*, Vol 10, No. 4, pp 249–271. <https://doi.org/10.1037/1089-2699.10.4.249>
- Driskell, T., Driskell, J. E., Burke, C. S. and Salas, E. (2017) "Team Roles: A Review and Integration", *Small Group Research*, Vol 48, No. 4, pp 482–511. <https://doi.org/10.1177/1046496417711529>
- DuBryn, A. J. (1995) *The Breakthrough Team Player: Becoming the M.V.P. on Your Workplace Team*, AMACOM.
- Dulewicz, V. (1995) "A validation of Belbin's team roles from 16PF and OPQ using bosses' ratings of competence", *Journal of Occupational and Organizational Psychology*, Vol 68, No. 2, pp 81–99. <https://doi.org/10.1111/j.2044-8325.1995.tb00574.x>
- Fisher, S., Hunter, T. A. and Macrosson, W. D. K. (2001) "A validation study of Belbin's team roles", *European Journal of Work and Organizational Psychology*, Vol 10, No. 2, pp 121–144. <https://doi.org/10.1080/13594320143000591>
- Fujimoto, M. (2016) "Team Roles and Hierarchic System in Group Discussion", *Group Decision and Negotiation*, Vol 25, No. 3, pp 585–608. <https://doi.org/10.1007/s10726-015-9453-7>
- Furnham, A., Steele, H. and Pendleton, D. (1993) "A psychometric assessment of the Belbin Team-Role Self-Perception Inventory", *Journal of Occupational and Organizational Psychology*, Vol 66, No. 3, pp 245–257. <https://doi.org/10.1111/j.2044-8325.1993.tb00535.x>
- Gander, F., Ruch, W., Platt, T., Hofmann, J. and Elmer, T. (2018) "Current and ideal team roles: Relationships to job satisfaction and calling", *Translational Issues in Psychological Science*, Vol 4, No. 3, pp 277–289. <https://doi.org/10.1037/tps0000165>
- Gutiérrez, L., Fonseca V. M., Keith, B., Quelopana, A. (2019) "Using the Belbin method and models for predicting the academic performance of engineering students", *Computer Applications in Engineering Education*, Vol 27, No. 2, pp 500–509. <https://doi.org/10.1002/cae.22092>
- Hare, A. P. (1973) „Theories of Group Development and Categories for Interaction Analysis", *Small Group Behavior*, Vol 4, No 3, pp 259–304. <https://doi.org/10.1177/104649647300400301>
- Hollenbeck, J. R., Beersma, B. and Shouten, M. E. (2012) „Beyond Team Types and Taxonomies: A Dimensional Scaling Conceptualization for Team Description", *Academy of Management Review*, Vol 37, No. 1, pp 82–106. <https://doi.org/10.5465/amr.2010.0181>
- Kraus, S., Breier, M., Lim, W. M., Dabić, M., Kumar, S., Kanbach, D., Mukherjee, D., Corvello, V., Piñeiro-Chousa, J., Liguori, E., Palacios-Marqués, D., Schiavone, F., Ferraris, A., Fernandes, C. and Ferreira, J. J. (2022) "Literature reviews as independent studies: Guidelines for academic practice", *Review of Managerial Science*, Vol 16, No. 8, pp 2577–2595. <https://doi.org/10.1007/s11846-022-00588-8>
- Kuckartz, U. and Rädiker, S. (2019) *Analyzing Qualitative Data with MAXQDA: Text, Audio, and Video*, Springer International Publishing.
- Lehmann-Willenbrock, N., Beck, S. J. and Kauffeld, S. (2016) "Emergent Team Roles in Organizational Meetings: Identifying Communication Patterns via Cluster Analysis", *Communication Studies*, Vol 67, No. 1, pp 37–57. <https://doi.org/10.1080/10510974.2015.1074087>
- Manning, T. (2013) "360 degree assessments of team role behaviours in different contexts", *Industrial and Commercial Training*, Vol 45, No. 7, pp 397–405. Scopus. <https://doi.org/10.1108/ICT-04-2013-0024>
- Margerison, C. (2001) "Team competencies", *Team Performance Management: An International Journal*, Vol 7, No. 8, pp 117–122. <https://doi.org/10.1108/13527590110411028>
- Margerison, C., McCann, D. and Davies, R. (1986) "The Margerison-McCann Team Management Resource—Theory and Applications", *International Journal of Manpower*, Vol 7, No. 2, pp 2–32. <https://doi.org/10.1108/eb045060>

- Mathieu, J. E., Tannenbaum, S. I., Kukenberger, M., Donsbach, J. S. and Alliger, G. M. (2015) "Team Role Experience and Orientation A Measure and Tests of Construct Validity", *Group and Organization Management*, Vol 40, No. 1, pp 6–34. <https://doi.org/10.1177/1059601114562000>
- Moreno, J. L. (1934) *Who shall survive?: A new approach to the problem of human interrelations. - Who shall survive? A New Approach to the Problem of Human Interrelations*, Nervous and Mental Disease Publishing Co. <https://doi.org/10.1037/10648-000>
- Mumford, T. V., Van Iddekinge, C. H., Morgeson, F. P. and Campion, M. A. (2008) "The team role test: Development and validation of a team role knowledge situational judgment test", *The Journal of applied psychology*, Vol 93, No. 2, pp 250–267. <https://doi.org/10.1037/0021-9010.93.2.250>
- Nestsiarovich, K. and Pons, D. J. (2018) "Interaction Diagrams: Development of a Method for Observing Group Interactions", *Systems Research and Behavioral Science*, Vol 9, No. 1, pp 5. <https://doi.org/10.3390/bs9010005>
- Parker, G. M. (1990) *Team players and teamwork*, Jossey-Bass, San Francisco.
- Parker, S. K. (1998) Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions", *The Journal of applied psychology*, Vol 83, No. 6, pp 835–852. <https://doi.org/10.1037/0021-9010.83.6.835>
- Prichard, J. and Stanton, N. A. (1999) "Testing Belbin's Team Role Theory of Effective Groups", *Journal of Management Development*, Vol 18, No. 8, pp 652–665. <https://doi.org/10.1108/02621719910371164>
- Ruch, W., Gander, F., Platt, T. and Hofmann, J. (2018) "Team roles: Their relationships to character strengths and job satisfaction", *The Journal of Positive Psychology*, Vol 13, No. 2, pp 190–199. <https://doi.org/10.1080/17439760.2016.1257051>
- Senior, B. (1998) "An empirically-based assessment of Belbin's team roles", *Human Resource Management Journal*, Vol 8, No. 3, pp 54–60. <https://doi.org/10.1111/j.1748-8583.1998.tb00173.x>
- Smith, K. B. (2002) "Typologies, Taxonomies and the Benefits of Policy Classification", *Policy Studies Journal*, Vol 30, No. 3, pp 379. <https://doi.org/10.1111/j.1541-0072.2002.tb02153.x>
- Soaita, A. M., Serin, B. and Preece, J. (2020) "A methodological quest for systematic literature mapping", *International Journal of Housing Policy*, Vol 20, No. 3, pp 320–343. <https://doi.org/10.1080/19491247.2019.1649040>
- Stempfle, J., Hübner, O. and Badke-Schaub, P. (2001) "A Functional Theory of Task Role Distribution in Work Groups", *Group Processes and Intergroup Relations*, Vol 4, No. 2, pp 138–159. <https://doi.org/10.1177/1368430201004002005>
- Stewart, G. L., Barrick, M. R. (2000) "Team Structure and Performance: Assessing the Mediating Role of Intrateam Process and the Moderating Role of Task Type", *Academy of Management Journal*, Vol 43, No. 2, pp 135–148. <https://doi.org/10.2307/1556372>
- Wiggins, J. S. (1979) "A Psychological Taxonomy of Trait-Descriptive Terms: The Interpersonal Domain", *Journal of Personality and Social Psychology*, Vol 37, No. 3, pp 395–412. <https://doi.org/10.1037/0022-3514.37.3.395>

The Effectiveness of Governance Through Fiscal Policy Management in South Africa

Emmanuel Innocents Edoun

Tshwane University of Technology, Pretoria, South Africa

edounei@tut.ac.za

ABSTRACT: Fiscal Policy is an important instrument for managerial decision-making. Many countries in Africa have adopted this policy to ignite socio-economic development. In South Africa (SA), several fiscal policy strategies have been adopted and implemented since the country's transition to democracy in 1994 with the aim of stimulating economic growth. Fiscal Policy is the utmost significant tool of economic management that is used by government to achieve the growth of economic activities. It is a vital measure of economic policy that achieves the foremost objective of managing economic growth, accomplishing complete employment, preserving the stability of price, settlement of economic balance and attaining societal integrity. The objective of this paper revealed a positive relationship between fiscal policy and managerial decision making in South Africa. In addition, the findings suggests that government spending has proven unsustainable, and continued spending on some of these policies may exacerbate the country's economic situation, given the fact that its expenditure is largely dependent on income tax. Based on the findings, this paper recommends that, for the SA economy to perform better, resources should be diverted from government consumption (thereby reducing funding for some of the current fiscal policies) to investment spending (e.g., job creation, poverty alleviation and promotion of long-term economic growth through infrastructure development).

Keywords: South Africa, Socio economic development, Fiscal policy, Managerial decision making

1. Introduction and Background

Globally, fiscal policy continues to serve as an important tool for achieving government broad economic objectives. The way a government responds to its debt positions influences economic stability, which in turn influences public debt patterns. Given most emerging economies and persistent increases in government expenditure positions, fiscal sustainability analysis is crucial to maintaining macroeconomic stability (Budina & van Wijnbergen, 2007). Kim et al. (2021) asserted that fiscal sustainability is the cornerstone of macroeconomic stability at the macroeconomic level. This is also crucial for economic growth since a country with a significant deficit is more likely to face macroeconomic instability, which may inhibit private investment.

According to Giammarioli et al. (2007), there are several methods to evaluate the fiscal sustainability of a country. The extensively applied strategy entails determining whether the government acts in accordance with the present value borrowing constraint (Schick, 2005). Thus, a government is said to be fiscally sustainable if the present value of future revenue flows is greater than the amount outstanding. SouthAfrica fiscal policy position, like that of many other developing countries, reflects how the government planned to adjust its monetary obligation. As a result, the government attempts to influence the economy trajectory through manipulating taxes and spending by adopting expansionary fiscal policy position (Abdulla, Mustafa & Dahalan, 2012).

Because of the adoption of expansionary fiscal policy as a recovery and consolidation strategy, government expenditure in South Africa is divided into two categories: government investment spending and government consumption spending (Tendengu, Kapingura & Tsegaye, 2022). Given the country persistently rising unemployment, poverty, and income distribution inequities, the role of fiscal policy in stabilising the South African economy and ensuring its sustainability is a major concern.

2. Review of the Related Literature

South African economy is controlled by the Monetary and Fiscal policies. We could not escape to also explain what monetary and fiscal policies are. To apprehend better we will explain the two policies. According to Omitogun and Ayinla (2007) Monetary policy is generally administered by a central bank and handles interest rates and the supply of money in circulation. Whereas Fiscal policy concerns taxation and government spending and is often determined by government legislation (See in figure 1 below). The main purpose of this assignment is to have a better understanding of Fiscal policy - a tool for managerial decision-making in South Africa. Therefore, so we are there to interrogate the relevant literature that underpins how this policy functions.

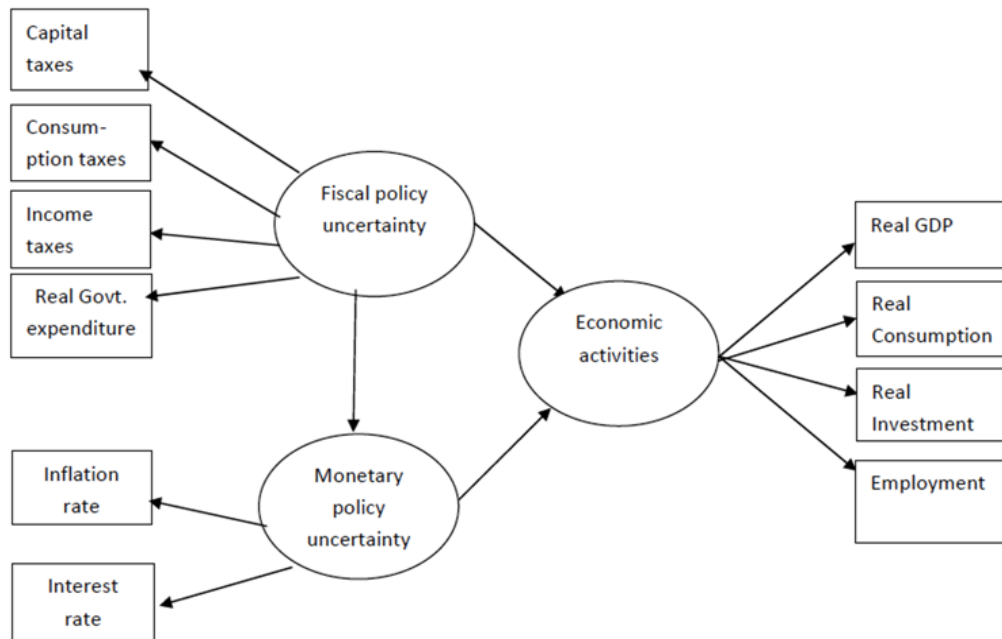


Figure 1: Fiscal policy and Monetary policy diagram

Ocran (2011) infers that Fiscal policy is related to the government's authority to review the government spending by reducing its size of, income as well as borrowings in order to achieve some macroeconomic goals. In addition to that, the primary goal of fiscal policy is to stabilise the government debt-to-GDP ratio by lowering the budget deficit. Furthermore, Fiscal policy tries to promote economic and social development by enacting sensible macroeconomic policies that establish a balance between government revenues, expenditure, and borrowing to achieve long-term economic growth (Ocran, 2011:604-618). To understand better Fiscal policy is generally used by policymakers in conjunction with monetary policy to ensure balanced and sustainable economic growth. This policy is the most important macroeconomic stabilisation tool at the disposal of government and policymakers to influence economic activities in the country through public revenues, according to the National Treasury (2017).

Fiscal policy and economic growth are two major issues that have been studied theoretically and empirically. Several authors sought to link these traits using theories such as the Solow growth theory, the Classical, Keynesian, and Neo-classical theories. Omitogun and Ayinla (2007) claimed, based on differences in some of these perspectives, that the Classical school argues that government debt has little effect on private sector savings in general. A government deficit funded by debt, according to this argument, discourages private-sector investment. Notable, Fiscal policy is thus viewed as a tool for overcoming economic swings. Similarly, the Neoclassical school of thought maintained that the manner in which fiscal deficits are funded had the potential to alter the amount of consumption, investment, and economic growth.

Keynes (1949) established the Keynesian theory of economic development, which called for the government to influence economic growth through changes in public spending and taxes. According to the Keynesian (1949) law, government expenditure is the fundamental engine of economic development because of its expansionary and contracting impacts on aggregate demand.

Expansionary policies are implemented when the government raises spending or lowers taxes to stimulate aggregate demand. Expansionary processes result in increased output, employment creation, and, as a result, economic growth. On the other hand, contracting measures are implemented when the government reduces spending or raises taxes in order to slow the economy (Blanchard, 2010:53-71). Wagner (1890), in contrast to Keynes (1949), believes that economic growth is a key factor that drives fiscal policy. According to Ismal (2011), improving economic activities should be at the forefront of economic development policy if growth is demonstrated to be a deterministic component of government expenditure.

Significantly, evaluating both Keynes' and Wagner's theories is essential for describing the key agents of economic development to plan proper economic policy. This assignment uses the theoretical rationale offered

by Keynesians (1949) and Wagner (1890) for the law of economic development as a tool for managerial decision-making in South Africa. However, for the purpose of this assignment these theories were deemed relevant in marking strategic decision as a managerial decision-making in South Africa by utilising fiscal policy.

3. Discussions

Fiscal policy to reduce poverty and inequality in South Africa

Fiscal policy is widely seen as a vital policy instrument to ensure fair income distribution. Fiscal policy in the form of taxation and social spending influences the welfare of household members through monetary payment by way of taxes and transfers as well as through the provision of in-kind social benefits, including expenditure on free education and health care uptake (Gupta 2018).

South Africa has the world's most progressive tax systems in the world (Ehrenfreund, 2017). The income tax significantly reduces market income inequality by flattening the incomes of the wealthy and allowing the funding of social protection tools such as the welfare system and free basic services. Income tax is the government's largest tax instrument, and its share of tax revenue has increased over the past decade. Measured as a percentage of income, however, it has become less progressive over time, despite tariff increases. While income tax levels have risen, market incomes have risen more, particularly in the top decile (Goldman M & Woolard I 2022)

According to SASSA Annual Performance plan (2022- 2023) approximately 31% (more than 18 million grants) of South Africa's population depends on the social assistance programme to meet their basic needs. Furthermore, the implementation of the COVID-19 SRD special grant of R350 supports an average of 10 million citizens monthly, this, increases the number of people relying on social transfers to about 47% of the total population. This increases the number of citizens who rely on social transfers to more than 28 million which equates to about 47% of the population. This translates to R199 189 billion paid to social grants in 2021.

The Personal Income Tax (PIT) offers an opportunity to increase tax collection and reduce inequality while minimizing the increase in poverty. It therefore seems reasonable that a high inequality country such as South Africa would be relatively more dependent on an income tax than other less progressive taxes such as Value Added Tax (VAT). On the other hand, if taxing the wealthy is perceived as unfair, illegitimate, or too onerous, wealthy individuals may choose to go elsewhere with two potentially negative consequences: reduced tax revenue to fund services supplied to the rest of the population, and reduced economic growth – when these people take their companies and possibly jobs with them (Goldman M & Woolard I 2022).

National Treasury budget review (2023) states that the total consolidated government spending will amount to R7.08 trillion over the next three years, of which 51 per cent or R3.6 trillion is allocated for the social wage. Based on this information, it is clear that many people in South Africa rely on the state for income for survival. This is of particular concern as there were only 6.3 million individual taxpayers in 2022. These 6.3 million individuals (representing approximately 10% of the population) contribute 40% of South Africa's total tax revenue. Another concern is that the decline in Personal Income Tax was the result of the weak economy, which has reduced companies' ability to grow, increase salaries and hire employees. The outlook for South Africa's economy is expected to remain subdued (GDP is expected to grow between 1.4% and 1.8% through 2023) and the unemployment rate is expected to remain at unsustainable levels, making this trend likely to continue.

4. Findings

Findings on Fiscal Policy to reduce poverty and Inequality in South Africa

- High income taxes will result in lower levels of consumption and savings. These in turn translate into lower economic growth.
- South Africa is using its fiscal tools to effectively reduce market income poverty and inequality through a slightly progressive tax system and very progressive social spending, yet levels of inequality and poverty remain unacceptably high.
- The government's finances are already unsustainable, and continuing spending more on social grants will only make it worse for our economy.
- The tax base is simply not strong enough to carry it anymore.
- Continuing with spending more on social grant could deepen debt and hinder economic growth.

5. Recommendations

Recommendations on Fiscal policy to reduce poverty and inequality in South Africa

- In the future, tackling the twin challenges of poverty and inequality in line with fiscal sustainability requires higher and more inclusive economic growth in support of fiscal policies. This would be particularly important to meet the need for jobs and higher incomes, particularly at the bottom of the income distribution, thereby helping to narrow the income gap between rich and poor and making fiscal policies more effective.
- Innovative approaches are needed to help South Africa avoid a fiscal trap that entails a downward spiral of mutually reinforcing economic stagnation, low revenues, and spending cuts. At the same time, South Africa must make people's needs, the promotion of equality and the realization of rights central fiscal goals. This is not a choice but a constitutional obligation.

6. Conclusions

In conclusion, we have established that the tax burden is impacting more on individuals with low income even though they are in the lower tax brackets the effects of inflation are hitting. The government has come up with solutions such as the grant, but they have not assisted in the alleviation of poverty as the cost of living has drastically risen. It is, therefore, the reason we have mentioned in our recommendation that we have stated that the reduction of load shedding or elimination thereof will be beneficial to the South African economy as job losses will be minimised and businesses will thrive, and this will in return assist the economy by being able to collect more tax.

Acknowledgements

The following are my MBA students who contributed in the discussions and policy debates for the paper. The proceeds is now been edited by me for submission and presentation in this conference.

Rudzani Comfort Monyayi, Lungisani Xolani Khumalo, Mashudu Ramunenyiwa, Veronica Matshediso Mahlaku and Kgomalla Joel Petje

References

- Abdulla, H., Mustafa, M. M. and Dahalan, J. (2012). An Empirical Study on Fiscal Sustainability in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 2(1):72- 90.
- Browning E.K. (1976). The Marginal Cost of Public Funds. *Journal of Political Economy*, 84, 283-298.
- Budina, N. and van Wijnbergen, S. (2007). Quantitative Approaches to Fiscal Sustainability Analysis: A New World Bank Tool applied Turkey. World Bank, Working Paper No. 4169.
- Ehrenfreund, M. 2017. The country with the world's most progressive taxes has the world's highest income inequality. Available at: <https://www.washingtonpost.com/news/wonk/wp/2017/07/16/what-american-liberals-could-learn-from-south-africa/> (Accessed on: 23 May 2023).
- Giammarioli, N., Nickel, C., Rother, P. and Vidal, J. P. (2007). Assessing Fiscal Soundness: Theory and Practice. European Central Bank, Occasional Paper Series No. 56.
- Goldman M & Woolard I 2022: Income tax inequality pp 1-2
- Gupta, S. 2018. Income Inequality and Fiscal Policy: Agenda for Reform in Developing Countries. (Growth and Reduce Income Inequality Series Working Paper); New York: Friedrich-Ebert-Stiftung
- Ismail, R. 2011, Assessing economic growth and fiscal policy in Indonesia. *East-West Journal of Economics and Business*, 14(1): 53-71.
- Journal of Economic Studies*, 38(5), 604-618.
- Keynes, J.M.1940. The Collected Writings of John Maynard Keynes, Essays in Biography. London: Macmillan.
- Kim, Adam, Robert King, and Simon Rodd. 2021. Will the New Keynesian Macroeconomics Resurrect the IS-LM Model? *Journal of Economic Perspectives* 7: 67–82.
- National Treasury, 2017. National Budget Review: [Online] Available at: <http://www.treasury.gov.za/documents/national%20budget/2017/review/Chapter%203.pdf>. [Accessed on 19/05/2023].
- National Treasury, 2023, Budget review [Online] Available <https://www.treasury.gov.za/documents/national%20budget/2023/review/FullBR.pdf> [Accessed on 21/05/2023].
- Ocran, M.K. 2011, Fiscal policy and economic growth in South Africa.
- Omitogun, O. & Ayinla, T. A. 2007. Fiscal Policy and Nigerian Economic Growth: Open Economy. IMF Working Paper(500P).
- Tendengu, S., Kapingura, F. M., & Tsegaye, A. (2022). Fiscal Policy and Economic Growth in South Africa. *Economies*, 10(9). <https://doi.org/10.3390/economies10090204>
- Wagner, C.G., 1890. A case of trephining for general paresis. *American Journal of Psychiatry*, 47(1), pp.59-65.

Organisational Competencies: The Essence of Emerging Resilience

Oroit Elgezabal¹, Kristina Mirchuk¹, Katrin Singer² and Maria Kretschmer²

¹ Geist Consultancy, Eibar, Spain

² Fraunhofer-Institut für Produktionsanlagen und Konstruktionstechnik IPK, Berlin, Germany

o.elgezabal@geistconsultancy.com

mirchuk.k@geistconsultancy.com

katrin.singer@ipk.fraunhofer.de

maria.kretschmer@ipk.fraunhofer.de

Abstract: This paper investigates organisational resilience as an emergent property arising from the interactions of specific organisational competencies. Drawing on the principles of emergence and the Resource-Based View (RBV) theory, the study aims to support Small and Medium Enterprises (SMEs) by identifying the competencies that contribute to resilience; and defining how these competencies should interact for an organisation to be considered resilient. The paper outlines the process for consolidating an organisational resilience framework based on the ISO 22316 and BS 65000 international standards, as well as on the resilience cycle defined by the Fraunhofer institute. The methodology employed in this study includes a review of the relevant literature on organisational resilience, systems thinking, and the RBV theory. Additionally, the paper provides an analysis of the relationships between the three pillars of the framework, as well as the identification and merging of activities and abilities from both the ISO 22316 and BS 65000 standards. The study then identifies the organisational competencies required to acquire the abilities and execute the activities present in the organisational resilience framework. It also classifies the identified competencies into a competence atlas based on Erpenbeck's competence atlas but adapted to organisational competencies. The methodology applied in this work supports SMEs by defining a process for: identifying organisational competencies; and, defining their interactions to achieve desirable properties at the organisational level, while offering significant insights for the strategic planning process of organisations. Furthermore, it aims to raise awareness on the importance of carefully analysing the interactions among organisational assets in complex operational scenarios. Finally, the findings obtained, provide organisations with a set of organisational competencies, classified into a competence atlas, which enables them to become resilient in accordance with a resilience framework based on internationally recognized standards.

Keywords: Organisational resilience, Emergent property, Organisational competencies, ISO 22316, BS 65000, Resilience cycle

1. Introduction

Organisational resilience is a complex and multifaceted concept that has gained increasing attention in recent years due to the growing recognition of the need for organisations to be able to adapt and respond to unexpected challenges and disruptions. Its complex nature makes it difficult for organisations of any type to understand, thus hindering the definition of strategies for developing organisational resilience systematically and repeatedly. This is especially true for SMEs due to the specific challenges they confront (Stephanus, 2020).

Systems thinking has been recognized as an effective means to cope with complexity and generate effective solutions to complex management problems (Jackson, 2019). Systems thinking is a discipline for seeing wholes, concerned with identifying all the entities (and other issues) that might be important to the system (Crawley, 2016), as well as for understanding, or intervening in problem situations, based on the principles and concepts of the systems paradigm (Adcock, 2023). The essence of systems thinking discipline lies in seeing interrelationships rather than linear cause-effect chains and seeing processes of change rather than snapshots (Senge, 1990).

The contents presented in this paper are the result of applying systems thinking to the analysis of organisational resilience. The objective of the work is to better understand organisational resilience's nature with the aim of defining an approach which will enable organisations to become resilient in a more deterministic way.

The paper considers the resilience as a property possessed by organisations and analyses it through one of the core principles of systems thinking, namely emergence. According to this principle, every model of a human activity system exhibits properties as a whole entity, that derive from its component activities and their structure, but cannot be reduced to them (Checkland, 1998). These properties, called emergent properties, can be desirable or undesirable (Walden, 2015).

2. Methodology

In the following, the conceptual context of this paper (see 2.1 system & RBV theory) and the process followed (see 2.2) are described as well as a review of the relevant literature on organisational resilience and systems thinking (see 2.3) and a definition of organisational competencies (see 2.4) is given as theoretical background.

2.1 Conceptual Context

The conceptual basis of the work presented in this paper is that organisations are considered systems, in accordance with the definition of *engineered system* provided by ISO 15288 (2023) standard. The standard considers *engineered systems* as systems designed or adapted to interact with an anticipated operational environment to achieve one or more intended purposes while benefiting users and other stakeholders, as well as, complying with applicable constraints (Walden, 2023). Organisations of any type, including business organisations, are entities formed for the purpose of carrying on commercial enterprises. Therefore, they adjust to the definition of *engineered system* and, as it is described in section 2.3.1, they can be considered as sociotechnical systems.

Any system consists of four kinds of constituents (Meadows, 2009): (1) The boundary which defines what belongs to the scope of the system and what not; (2) the elements which are the constituent parts of the system; (3) the interconnections which are the relationships between elements of the systems; and (4) a function or purpose, for non-human and human systems, respectively. *Engineered systems* may be composed of any or all the following elements: people, products, services, information, processes, and/or natural elements (Walden, 2023). Related with system elements and relationships, the architecture of a system is an abstract description of the entities of a system and the relationships between those entities (Crawley, 2004).

Complementing the application of systems thinking, the Resource-based-view (RBV) theory is considered. According to this theory, an organisation can be considered as a collection of resources (Barney, 1991; Amit and Shoemaker, 1993). RBV theory emphasises internal resources and capabilities of a firm in formulating strategy to achieve sustainable competitive advantages in the marketplace, suggesting that the source of competitive advantage lies in: (1) the differences in the resources, both tangible and intangible, acquired and accumulated over time and available to the organisation; and (2) the heterogeneity of these resources (Srivastava, 2005). In this way, resources that are valuable, rare, inimitable, and non-substitutable make it possible for businesses to develop and maintain competitive advantages. These resources can be divided into assets (having resources), and competencies (doing resources) (Hall, 1992).

Taking these two pillars as a foundation, within the scope of this work, organisations are considered as sociotechnical systems, in which organisational competencies are considered their constituent elements. The paper postulates that organisational resilience is a desirable emergent property resulting from the interaction of a subset of organisational competencies.

2.2 Process Followed

The results of the study presented in this paper have been produced in three work packages which build upon each other.

The first work package has been focused on the definition of a resilience framework taking three elements as main references: The British Standard BS 65000 (2014), the international standard ISO 22316 (2017) and the resilience cycle defined by the Fraunhofer institute (Patzwald, 2021). The framework has been defined in three consecutive steps: first, the goals and objectives for building organisational resilience stated by the BS 65000 standard are mapped, by means of a matrix, into the different phases of Fraunhofer's resilience cycle; then, the attributes and activities of resilient organisations specified by the ISO 22316 standard are mapped, also by means of a matrix, to the BS 65000's objectives; finally, the activities and abilities stated in both standards are merged into a single comprehensive list of activities and abilities.

The second work package applies the principle of emergence and the concept of emergent properties, aligned with the RBV theory, to identify the organisational competencies associated to resilience. The work package is executed in three steps: first, every activity identified in the previous work package is considered in isolation from the rest. The organisational competencies enabling an organisation to carry out that specific activity are identified. The identification of competencies is made through brainstorming and analysis; once all the activities have been analysed in isolation, the competencies identified for all the activities are consolidated into a single list, in which every competence appears only once. This is necessary since some competencies are enablers for

several activities at the same time. Finally, the identified competencies are classified into a taxonomy, a so-called competence atlas, with several dimensions.

The third, and last, work package, analyses the defined competence atlas to better understand the architecture of organisational competencies and the dynamics through which resilience property emerges at organisational level. The analysis is performed from two different point of views: (1) from the point of view of BS 65000's goals and (2) from the point of view of Fraunhofer's resilience cycle.

2.3 Theoretical Background

The following sections provide a brief introduction in the basic concepts and relevant literature on organisational resilience as well as systems thinking and emergence.

2.3.1 Resilience

Resilience involves dealing with disruption, uncertainty and change with clear intent, coherence and appropriate resourcing. It is a combination of maintaining continuity through disruptive challenges, and long-term viability against a backdrop of strategic change and the changing external environment (BS 65000, 2014). Resilience is inherently relative, and no organisation, person, network, or system can be absolutely resilient, as they experience constant change and operate under varying degrees of uncertainty (BS 65000, 2014).

Organisational resilience describes the ability of organisations to fend off actual or potential threats, prepare for them, account for them, handle them, recover from them, and successfully adapt over and over again (Scharte et al., 2014). Being able to deal with the unexpected is crucial to not only survive in a volatile, uncertain, complex and ambiguous environment (VUCA environment for short), but also to benefit from it (Herbane, 2019).

2.3.2 Fraunhofer's resilience cycle

The resilience cycle defined by the Fraunhofer Institute (Patzwald, 2021), conceives organisational resilience as an adaptive process rather than a static steady state. The Fraunhofer Resilience Cycle can be divided into five phases which repeat in a never-ending sequence: (1) Prepare; (2) Prevent; (3) Protect; (4) Respond; and (5) Recover. Figure 1 shows the Fraunhofer resilience cycle with the main characteristics of its phases. Each phase of the resilience cycle requires different competencies that need to be trained in different areas of the organisation.

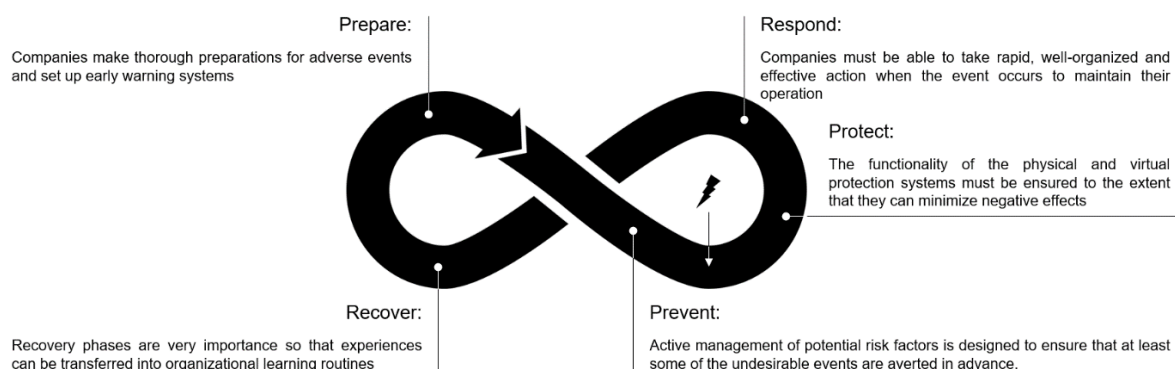


Figure 1: Fraunhofer resilience cycle

2.3.3 BS 65000

The British standard BS 65000 (2014) gives guidance on achieving enhanced organisational resilience. It describes organisational resilience, articulates its benefits, and explains how to build resilience by: clarifying the nature and scope of organisational resilience for top management; identifying the principal components of resilience to enable an organisation to review its resilience and to implement and measure improvements; and, identifying and recommending good practice already defined in existing standards and disciplines (BS 65000, 2014). BS65000 defines the following six different goals that contribute to building resilience: (1) Be informed; (2) Set direction; (3) Bring coherence; (4) Develop adaptive capacity; (5) Strengthen the organisation; and (6) Validate and review.

2.3.4 ISO 22316

The international standard ISO 22316 (2017) provides guidance to enhance organisational resilience for any size or type of organisation. It is not specific to any industry or sector. It establishes the principles for organisational resilience and identifies the attributes and activities that support an organisation in enhancing it. ISO 22316 identifies the following nine common attributes demonstrated by resilient organisations, which supported by activities, guide their utilization, evaluation and enhancement: (1) Shared vision and clarity of purpose; (2) Understanding and influencing context; (3) Effective and empowered leadership; (4) A culture supportive of organisational resilience; (5) Shared information and knowledge; (6) Availability of resources; (7) Development and coordination of management disciplines; (8) Supporting continual improvement; and (9) Ability to anticipate and manage change.

2.3.5 Organisations as sociotechnical systems

An organisation consists of a purposeful combination of interdependent resources (e.g. people, processes, organisations, supporting technologies, and funding) that interact with each other to coordinate functions, share information, allocate funding, create workflows, and make decisions, and that interact with their environment(s) to achieve business and operational goals through a complex web of interactions distributed across geography and time (Rebovich, 2011).

An organisation must do two things: (1) develop things within the enterprise to serve as either external offerings or as internal mechanisms to enable achievement of enterprise operations, and (2) transform the enterprise itself so that it can effectively and efficiently perform its operations and survive in its competitive and constrained environment (Walden, 2023).

Each organisation brings its own set of organisational competencies, and the unique combination of these competencies leads to the overall operational competence of the whole enterprise. There are three different main kinds of competencies: organisational competence, system competence, and operational competence. New competencies are developed to enhance enterprise competitive advantage in response to stakeholder's concerns about a problem situation (Walden, 2023). Figure 2 shows an abstraction of an organisation as a sociotechnical system.

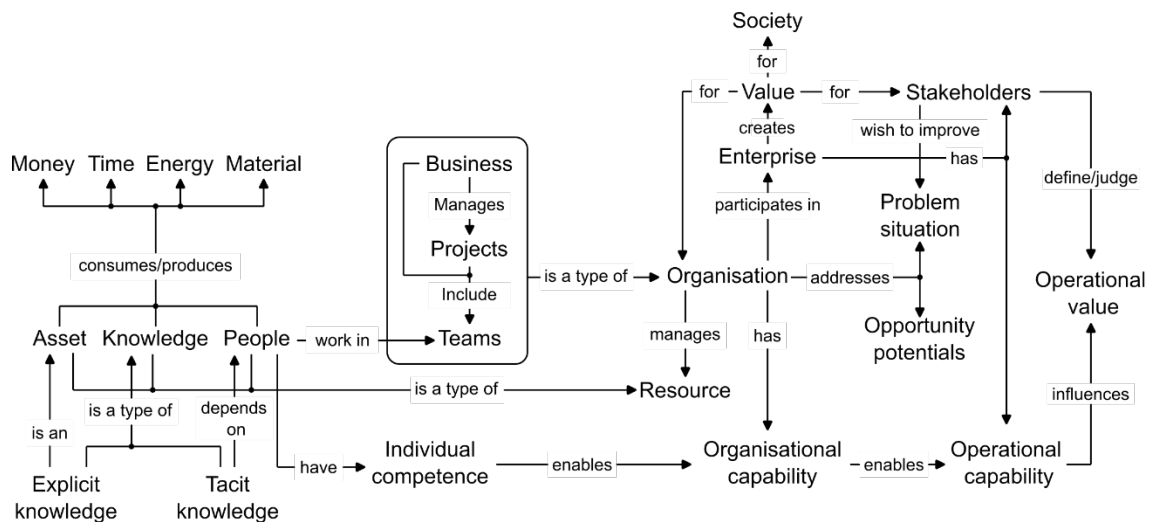


Figure 2: Concept map of an organisation as a sociotechnical system

It must be noted that the term *organisational capability* shown in Figure 2 is defined as “the ability to do something useful under a particular set of conditions.” (Walden, 2023). In this paper, as stated in section 2.4, the term *organisational competence* is defined as “Demonstrated ability or proficiency in performing specific tasks or activities” is used instead.

2.3.6 Emergence

Emergence is a fundamental property of all systems (Sillitto and Dori, 2017). Emergence describes the phenomenon that whole entities exhibit properties which are meaningful only when attributed to the whole, not to its elements (Walden, 2023). Emergence refers to what appears, materializes, or surfaces when a system operates (Crawley, 2016). Walden (2015) further expands this idea, emphasizing that the system elements

interact among themselves and with the environment, creating emergent properties. Insights into the emergent properties of a system can, therefore, only be gained from understanding the interrelationships of the system elements and the relation of these to the whole (system), as well as between the system and its environment (Walden, 2023). This interaction will cause function, behaviour, performance and, other intrinsic properties to emerge (Crawley, 2016).

Emergence results in form of inhibition, interference, resonance, or reinforcement of any system property (Walden, 2023). Emergence is a phenomenon which can be anticipated or unanticipated and, have desirable or undesirable effects (Walden, 2023). Figure 3 illustrates the concept of emergence, showing the existence of an emergent property at system level as the result of interactions between at least two elements of the system.

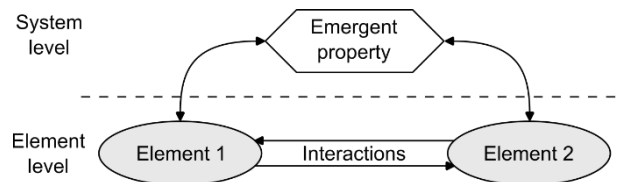


Figure 3: Concept of emergence

2.4 Organisational Competence

Competence refers to the unique set of skills, knowledge, and capabilities possessed by an organisation or firm, which are integrated and coordinated to create value for the organisation and deliver superior value to customers. These competencies are not limited to individual skills or technologies but involve a combination of various skills and technologies (Srivastava, 2005). Possessing core competencies alone is not sufficient; the key lies in the organisation's ability to effectively manage and leverage these competencies for its benefit. Additionally, organisational competence refers to the quality and degree of capitalization of the human resources owned by an organisation. It encompasses the process of integrating activities such as schooling, professional orientation, training, recruitment, integration, and career development. Organisational competence ensures high efficiency within the organisation by creating and developing individual professional competencies and utilising them to gain significant advantages.

Organisational Competence such as resilience are not static but adapt and evolve in response to changing market conditions, emerging opportunities or disruptive events, allowing the organisation to survive, create value, achieve superior performance and maintain its competitive advantage. Competence emerges as a result of the firm's ability to identify, develop, and integrate these resources in a way that is aligned with its strategic objectives. The concept of emergence, in the context of competence, highlights the dynamic and evolving nature of organisational capabilities. Competence is not a static concept but emerges and evolves over time through organisational learning, adaptation, and the accumulation of knowledge. As a company, the firm interacts with its environment, it gains valuable insights, adapts its competencies, and develops new ones to respond to changing market conditions and emerging opportunities. Competence emerges as a result of the firm's ability to learn from its experiences, experiment with new approaches, and continuously improve and innovate.

Considering RBV and emergence, in the scope of this paper, organisational competence is defined as follows: *Organisational Competence refers to the distinctive and dynamic set of skills, knowledge, and capabilities possessed by an organisation which provides it a demonstrated ability or proficiency in performing specific tasks or activities.*

3. Results

The results of the work executed following the steps described in section 2.2 are condensed in the following three elements:

3.1 Resilience Framework

The combination of the ISO 22316 and BS 65000 standards with the resilience cycle of the Fraunhofer institute results in a solid framework which defines the logical dependencies among the elements of the three sources. The resilience framework relates the activities that an organisation needs to be able to carry out in order to fulfil the objectives contributing to the achievement of goals associated to organisational resilience. It also enables the identification of goals, activities and abilities relevant at each stage of the resilience cycle. Figure 4 visualizes the resilience framework defined by combining the ISO 22316 standard, the BS 65000 standard and the

Fraunhofer resilience cycle, which constitutes the basis for identifying the competencies related to resilience as an emergent property.

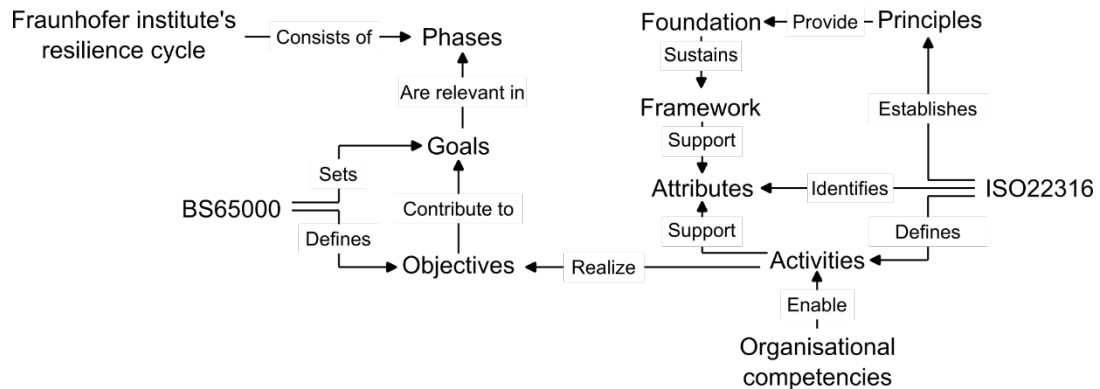


Figure 4: Resilience framework

3.2 Resilience Competence Model

The identified resilience-related organisational competencies have been classified into a taxonomy based on the Erpenbeck Competence Atlas (Erpenbeck, 2017). This atlas is a framework that provides a comprehensive model for understanding and developing competencies in individuals. Figure 5 shows the developed Competence atlas for resilience-related organisational competencies.

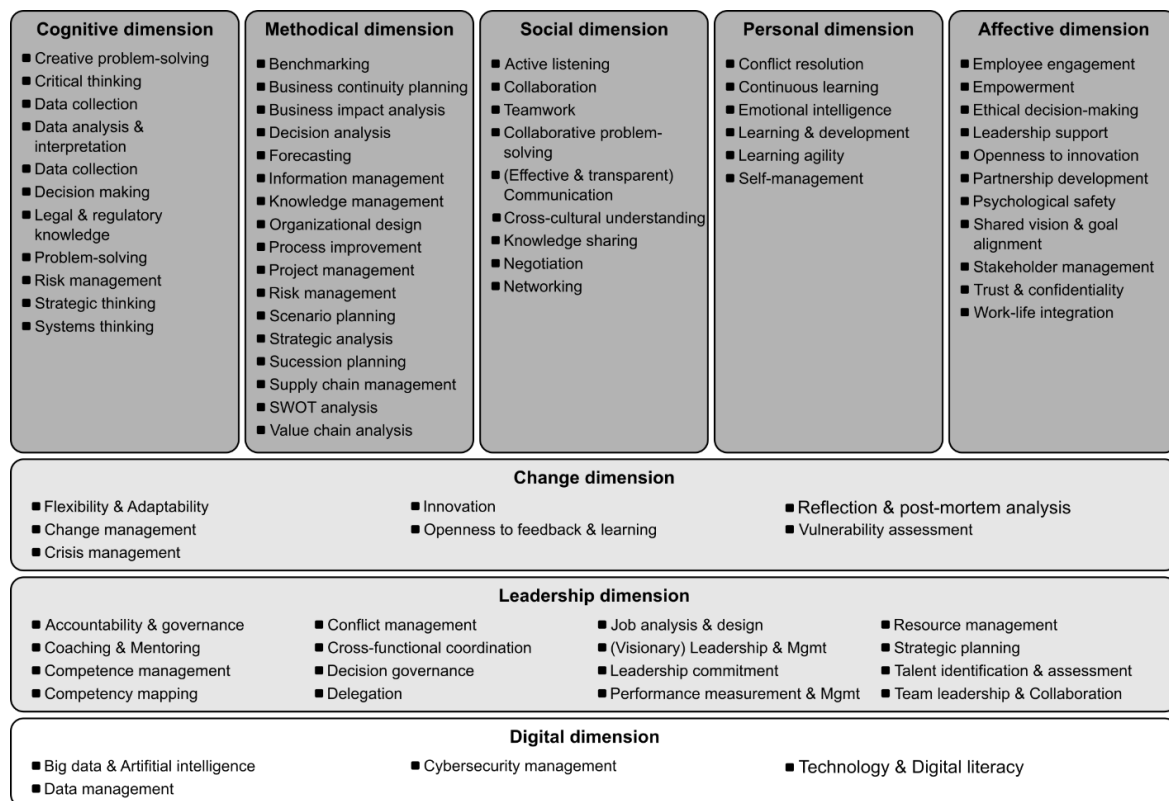


Figure 5: Resilience-related competence atlas

As it can be seen in Figure 5, Erpenbeck's five dimensions *Cognitive Dimension*, *Methodical Dimension*, *Social Dimension*, *Personal Dimension* and *Affective Dimension* have been extrapolated and extended for the organisational context, considering organisations as sociotechnical systems, into the following eight dimensions:

- **Cognitive Dimension:** Comparable to Erbenbeck, this dimension refers to the knowledge, skills and abilities required for effective task performance by the organisation and can be extended to the intellectual capital within the organisation.

- **Methodical Dimension:** Following Erpenbeck, this dimension focuses on the processes, methods, and techniques employed to achieve organisational goals and would encompass the various methodologies, systems, and procedures utilized within the organisation.
- **Social Dimension:** This dimension refers to competencies related to interpersonal relationships, collaboration, and communication. In the context of organisational competencies, this dimension becomes crucial in understanding how individuals work together and interact within teams and across departments.
- **Personal Dimension:** Following Erpenbeck, this dimension focuses on self-awareness, self-management, and personal development. Includes competencies related to individual growth, motivation, and adaptability.
- **Affective Dimension:** Comparable to Erpenbeck's framework this dimension addresses the values, attitudes, and motivation that influence behaviour and performance of the organisation and encompasses the shared values, culture, and organisational climate.
- **Change Dimension:** This dimension is an addition to Erpenbeck's competence atlas and refers to an organisation's ability to effectively manage and lead change.
- **Leadership Dimension:** This additional dimension refers to competencies that are essential for guiding and influencing others within the organisation.
- **Digital Dimension:** In today's digital age, this additional dimension is crucial since organisations need to possess digital competencies.

3.3 Competencies Heatmap

Even if organisational resilience requires the interaction of all the competencies contained in the competence atlas shown in Figure 5, not all the competencies possess the same degree of significance and contribution to the determination of the characteristics of the emergent resilience. The heatmap contained in Table 1 analyses the contribution of each identified organisational competence to organisational resilience from two different perspectives: The first, located on the left side of Table 1, analyses the significance of competencies to the achievement of the resilience goals defined by the BS 65000 standard; the second, located on the right side of Table 1, analysis the significance of competence in every of the phases within the Fraunhofer resilience cycle. In both cases, the numbers in every row represent the number of repetitions in which the corresponding organisational competence appears in activities associated to the Goals of BS 65000 and the Fraunhofer resilience cycle, respectively.

4. Discussion and Conclusion

There is much diversity in the definition of competencies at international level (Delamaire, 2005). The systems thinking approach applied in this work considers both, humans and organisations as complex systems. This allows to transfer the person-centred approaches to the organisation and thus derive a resilience-specific model of competencies.

The paper considers organisations as sociotechnical systems and analyses organisational resilience as a property associated to the system by applying one of the core principles of systems thinking, namely emerge. The paper abstracts an organisation as a collection of organisational competencies and analyses the competencies and the interactions among them, required to obtain properties such as resilience at organisational level, which are not observable when taking the organisational competencies independently.

The identified competencies have been classified into a taxonomy, called resilience-related competence atlas, with several dimensions, which serves as a useful tool for businesses and provides them benefits like standardization; strategic alignment, skill gaps analysis, knowledge management and Performance benchmarking with competitors.

Erpenbeck's Competence Atlas has been chosen as a basis for defining the dimensions of the competence atlas. However, and extrapolation and extension of the original dimensions to the organisational context has been necessary. Erpenbeck considered the competencies contained in his competence atlas as independent entities. The application of the emergence principle on top of the Erpenbeck's competence atlas, results in emergent properties not identified in the original atlas. Original competence atlas has been extended with three additional dimensions of significant importance: cross-cutting competencies that arise in correlation with the main dimensions.

Table 1: Analysis of organisational competencies in relation to the resilience framework

Goals of BS65000 standard						Competencies	Fraunhofer Resilience Cycle				
Be informed	Set direction	Bring coherence	Develop adaptive capacity	Strengthen the organisation	Validate & review	alphabetically sorted	Prepare	Prevent	Protect	Respond	Recover
0	0	0	0	5	0	Accountability and governance skills	0	5	5	5	5
0	0	1	0	0	0	Active listening skills	1	1	1	0	0
2	1	0	13	15	0	Flexibility and Adaptability skills	3	20	17	30	19
3	0	0	0	0	0	Benchmarking	3	3	0	0	3
2	0	0	0	0	0	Business continuity planning	2	2	0	0	2
1	0	0	0	0	0	Business impact analysis	1	1	0	0	1
1	3	3	0	4	5	Change management	12	16	7	4	4
0	4	0	0	0	0	Coaching & mentoring	4	4	0	0	0
11	3	6	0	16	0	Collaboration	20	36	22	16	27
0	3	3	0	0	0	Teamwork	6	6	3	0	0
1	0	0	0	0	0	Collaborative problem-solving	0	1	0	0	1
15	9	6	3	29	0	(Effective & Transparent) Communication skills	30	59	35	32	44
0	1	0	0	0	0	Competence management	1	1	0	0	0
0	1	0	0	0	0	Competency mapping	1	1	0	0	0
1	0	0	0	0	0	Conflict management	1	1	0	0	1
2	0	1	0	0	0	Conflict resolution	3	3	1	0	2
0	0	0	0	0	4	Continuous learning	4	4	0	0	0
0	0	0	12	3	0	Creative problem-solving skills	0	3	3	15	3
0	0	0	0	10	0	Crisis management skills	0	10	10	10	10
10	0	1	0	0	0	Critical thinking	11	11	1	0	10
3	0	0	0	0	0	Cross-cultural understanding	3	3	0	0	3
0	0	1	0	0	0	Cross-functional coordination	1	1	1	0	0
1	0	0	0	0	0	Cybersecurity management	1	1	0	0	1
0	0	0	0	4	6	Data analysis and interpretation	6	19	4	4	4
12	0	2	0	0	0	Data collection & analysis	14	14	2	0	12
0	0	1	0	0	0	Decision Analysis	1	1	1	0	0
0	0	1	0	0	0	Decision Governance	1	1	1	0	0
7	0	1	0	0	0	Decision making	8	8	1	0	7
0	0	0	5	12	3	Delegation skills	3	15	12	17	12
0	0	0	2	10	1	Digital competence such as IT security skills	1	11	10	12	10
1	0	1	0	0	0	Emotional intelligence	2	2	1	0	1
0	0	2	0	0	0	Employee Engagement	2	2	2	0	0
0	4	0	0	0	0	Empowerment	4	4	0	0	0
1	0	0	0	0	0	Ethical decision-making	1	1	0	0	1
7	0	0	0	0	0	Forecasting	7	7	0	0	7
0	0	1	0	0	0	Information management	1	1	1	0	0

Goals of BS65000 standard						Competencies	Fraunhofer Resilience Cycle				
Be informed	Set direction	Bring coherence	Develop adaptive capacity	Strengthen the organisation	Validate & review	alphabetically sorted	Prepare	Prevent	Protect	Respond	Recover
0	1	0	0	0	0	Innovation	1	1	0	0	0
0	1	0	0	0	0	Job Analysis and Design	1	1	0	0	0
2	0	0	0	0	0	Knowledge management	2	2	0	0	2
1	0	0	0	0	0	Knowledge sharing	1	1	0	0	1
3	9	3	17	36	0	(Visionary) Leadership and management skills	15	51	39	53	39
0	0	1	0	0	0	Leadership Commitment	1	1	1	0	0
0	0	1	0	0	0	Leadership support	1	1	1	0	0
0	4	6	0	12	0	Learning & development	10	22	18	12	12
0	0	0	15	3	0	Learning agility	0	3	3	18	3
1	0	0	0	0	0	Legal & regulatory knowledge	1	1	0	0	1
3	0	1	0	0	0	Negotiation	4	4	1	0	3
1	0	0	0	0	0	Networking	1	1	0	0	1
0	0	0	5	0	0	Openness to feedback and learning	0	0	0	5	0
1	0	0	0	0	0	Openness to innovation	1	1	0	0	1
0	1	0	0	0	0	Organisational design	1	1	0	0	0
1	0	0	0	0	0	Partnership development	1	1	0	0	1
0	4	1	0	0	1	Performance measurement and management	6	6	1	0	0
0	0	1	0	0	0	Problem-Solving	1	1	1	0	0
0	0	0	0	0	4	Process improvement	4	4	0	0	0
0	0	1	0	0	0	Project Management	1	1	1	0	0
0	0	1	0	0	0	Psychological safety	1	1	1	0	0
2	0	0	0	0	0	Reflection & post-mortem analysis	2	2	0	0	2
0	0	0	0	0	2	Resource management	2	2	0	0	0
0	0	0	0	0	4	Risk assessment	4	4	0	0	0
10	0	3	14	29	0	Risk management skills	13	42	32	43	39
3	0	0	0	0	0	Scenario planning	3	3	0	0	3
1	0	0	5	8	3	Self-management skills and competencies	5	13	13	13	9
0	0	1	0	0	0	Shared Vision and Goal Alignment	1	1	1	0	0
1	0	1	0	0	0	Stakeholder management	2	2	1	0	1
2	0	0	0	0	0	Strategic analysis	2	2	0	0	2
0	0	2	0	0	2	Strategic planning	4	4	2	0	0
10	1	0	14	3	0	Strategic thinking	11	14	3	17	13
0	1	0	0	0	0	Succession planning	1	1	0	0	0
1	0	0	0	0	0	Supply chain management	1	1	0	0	1
1	0	0	0	0	0	SWOT analysis	1	1	0	0	1
8	0	0	0	0	0	System thinking	8	8	0	0	8
0	1	0	0	0	0	Talent identification & assessment	1	1	0	0	0

Goals of BS65000 standard						Competencies	Fraunhofer Resilience Cycle				
Be informed	Set direction	Bring coherence	Develop adaptive capacity	Strengthen the organisation	Validate & review	alphabetically sorted	Prepare	Prevent	Protect	Respond	Recover
0	0	0	0	4	6	Team leadership and collaboration	6	10	4	4	4
0	0	1	0	0	0	Technology and Digital Literacy	1	1	1	0	0
1	0	0	0	0	0	Trust & confidentiality	1	1	0	0	1
2	0	0	0	0	0	Value chain analysis	2	2	0	0	2
1	0	0	0	0	0	Vulnerability assessment	1	1	0	0	1
0	0	1	0	0	0	Work-life integration	1	1	1	0	0

The results presented in the paper will help organisations of any size and sector to effectively focus their efforts on the development of organisational resilience by providing a clear orientation as well as a prioritization for their development, in accordance with the resilience cycle. The identified set of organisational competencies and their analysed relevance for different goals and phases in resilience cycle will be useful are relevant in the strategic planning process of organisations, if the long-term survivability of the company and the development of competitive advantages while operating in turbulent contexts, is in focus. This is the case, for example for managers in organisational analyses, but also in connection with mergers and acquisitions, outsourcing, restructuring or change processes. The results are also relevant as part of the introduction of strategic competence management in organisations.

References

- Adcock, R. (2023) „Systems thinking“, *Systems Engineering Body of Knowledge*, v. 2.8 [online] https://sebokwiki.org/wiki/Systems_Thinking.
- Amit, R. and Schoemaker, P. J. (1993), “Strategic assets and Organisational rent”, *Strategic Management Journal*, 13, pp. 33-46.
- Barney, J. B. (1991), “Firm resources and sustained competitive advantage”, *Journal of Management*, 17(1), pp. 99-121.
- British Standards Institution (2014) *BS65000: Guidance on organisational resilience*.
- Checkland, P., (1998) *Systems Thinking, Systems Practice*. Chichester, UK: John Wiley & Sons, Ltd.
- Crawley E. et al. (2004) *Engineering Systems Monograph. The Influence of Architecture in Engineering Systems.*, [online], https://web.mit.edu/deweck/www/PDF_archive/4%20Other%20Major%20Pubs/4_5_ESD2004_architecture-b.pdf
- Crawley E. et al. (2016) *System architecture: Strategy and Product Development for Complex Systems*. Harlow, UK: Pearson Education.
- Delamaire, F. and Winterton, J. (2005) “What is Competence?”, *Human Resource Development International*, Vol. 8, No. 1, pp. 27-46.
- Dori, D. and Sillitto, H. (2017) “What is a System? An Ontological Framework.”, *Systems Engineering*, Vol. 20, No. 3, pp. 207-219.
- Erpenbeck, J. (2017) *Handbuch Kompetenzmessung. Erkennen, verstehen und bewerten von Kompetenzen in der betrieblichen, pädagogischen und psychologischen Praxis*. Stuttgart, Deutschland: Schäffer-Poeschel Verlag.
- Hall, R. (1992). “The Strategic Analysis of Intangible Resources”, *Strategic Management Journal*, 13(2), pp. 135-144.
- Herbane, B. (2019) “Rethinking organisational resilience and strategic renewal in SMEs”, *Entrepreneurship & Regional Development*, Vol. 31, No 5-6, pp. 476–495, doi: 10.1080/08985626.2018.1541594.
- International Standardization Organisation (ISO) (2023) *ISO 15288: Systems and software engineering – System life cycle processes*.
- International Standardization Organisation (ISO) (2017) *ISO 22316: Security and resilience — Organisational resilience — Principles and attributes*.
- Jackson, M. C. (2019) *Critical Systems Thinking and the Management of Complexity*. Hoboken, USA, John Wiley & Sons Ltd.
- Meadows, D. H. (2009) *Thinking is Systems: A primer*. Oxon, UK, Earthscan.
- Patzwald, M. et al, (2021) *Resilienz im strategischen Management produzierender Unternehmen*. Konzeptpapier. Fraunhofer. DOI: 10.24406/ipt-n-640932. Available at: <https://www.ipt.fraunhofer.de/resilienz-im-strategischen-management>
- Revobich, G. and White, B (2011) *Enterprise Systems Engineering: Advances in the Theory and Practice*. Boca Raton, USA, CRC Press.
- Scharte, B. et al, (2014) “Resilience: International Perspectives” in *Resilien-Tech: »Resilience by Design«: a strategy for the technology issues of the future*, K. Thoma (Ed.), pp. 51–91, [online], <https://www.acatech.de/publikation/resilien-tech-resilience-by-design-strategie-fuer-die-technologischen-zukunftsthemen-2/download-pdf/?lang=en>.

- Senge, P. (1990) *The Fifth Discipline: The Art and Practice of the Learning Organisation*. New York, USA, Doubleday, 1990
- Srivastava, S. C., (2005) "Managing Core Competence of the Organisation", *Vikalpa*, 30(4), pp. 49-63.
- Stephanus J., (2020) *SME focus- Long-term strategy for the European industrial future*. European Union, Luxembourg.
- Walden, D. D. et al., (2015) "Systems Engineering Handbook – A guide for system life cycle processes and activities 4th ed.". INCOSE-TP-2003-002-04. San Diego, USA: International council on Systems Engineering (INCOSE).
- Walden, D. D. et al., (2023) "Systems Engineering Handbook – A guide for system life cycle processes and activities 5th ed.". INCOSE-TP-2003-002-05. San Diego, USA: International council on Systems Engineering (INCOSE).

Public Administration Leadership and Public Policies

Elisabete Fialho^{1,2}, Maria José Sousa¹ and Ana Moreira^{3, 4, 5}

¹ISCTE-Instituto Universitário de Lisboa, Lisbon, Portugal

²CIES-ISCTE - Centro de Investigação e Estudos de Sociologia, Lisbon, Portugal

³ISPA—Instituto Universitário, Lisbon, Portugal

⁴APPSyCI—Applied Psychology Research Center Capabilities & Inclusion, Lisbon, Portugal

⁵Universidade Europeia, Lisbon, Portugal

elisabetefialho@gmail.com

Abstract: This is a study of Portuguese central public administration addressing leadership typology, using the Full Range Leadership (FRL) model to better understand the leadership effectiveness process (Bass & Avolio, 1994). The study examines the impact of training, professional experience, and organizational context on managers' performance as well as predominant leadership styles. A total of 422 participants in the Portuguese state's central public administration responded to this quantitative research. The results indicate that the perception of leadership style differs significantly between leaders and followers, as does the perception of evaluation. Regarding the organization where they work, significant differences were found in the perception of transformational leadership, contingent rewards, laissez-faire, recruitment, training, and evaluation. The association between leadership style and public policies is significant, and this relationship is moderated by whether the participant holds a managerial position. This study tells us what type of leadership is predominant in public administration and its association with public policies.

Keywords: Leadership, Public policies, Public administration, Quantitative study

1. Introduction

According to Sarachek (1968), leadership originated with different attributes at the beginning of human civilisation. In this sense, the concept of leadership dates to when individuals tried to organise themselves in groups to perform specific tasks, such as hunting. For Clawson (2003), during the Industrial Revolution, the concept of leadership gained strength, along with the power gained by people considering their skills.

Leadership is largely defined around adjectives such as "exchanges, processes, competence, relationship, and construction" (Gill, 2011). The author also mentions that for sociologists, leadership is more about relationships between people rather than individual exchanges and characteristics, which often focus on power and dominance. Leadership is a complex concept that can change according to the various variants of the context in which it is practised. For Gill (2011), leadership can be "created" or "designed," for example, as a process or a relationship. However, it is hardly imagined as an "invention, a fabricated story," invented specially to disappoint.

Burns (1978) defines leadership as motivating followers by focusing on their values and impact on their performance. It is a process of social exchange that impacts workers' performance in their quest to achieve specific goals.

The public policies developed over the last 30 years in Portugal find their foundations in the Constitution approved in 1976 and in its successive revisions. In this way, the constitutional framework of defining and implementing public policies in sectors such as health, social protection, education, and territory, as the promotion of equality and justice, allowed the country to be transformed and modernised (Rodrigues & Silva, 2016).

For Carvalho (2013), the challenge that many politicians face is choosing policies that strengthen their system's capacity to achieve medium and long-term development goals, ensuring the satisfaction of the needs and expectations of those who accompanied them in their quest for power.

This study has as its primary objective to study the association between leadership style and public policies and whether this relationship is moderated by whether or not the participant holds a leadership position.

2. Literature Review

2.1 Leadership

It is increasingly evident that in the 21st century, leadership must come from a type of leader with new perspectives and more contemporary (Mehrad et al., 2020). To this end, the authors indicate that leaders should promote positive employee association through effective leadership because leadership is one of the most

important elements contributing to employee engagement at work and, consequently, extremely important for creating and encouraging well-being in the workplace and increasing motivation.

Transactional and transformational leadership are considered complementary forms of leadership because leaders are most effective when they exhibit both styles (Goula et al., 2019).

Transformational leadership includes behaviours that encourage workers to take a broader view of their work and challenge them to adopt new approaches (Mehrad et al., 2020). This leadership style has been widely successful, but it appears to be incomplete for the challenges faced by today's leaders because it does not prevent abuses of power and allows the ends to justify the means (Latham, 2014).

Transactional leadership is characterized by an exchange relationship between the leader and the led, in which each party pursues their respective interests. These are met by clarifying to the employees their responsibilities, the leader's expectations, and the benefits for both (Mehrad et al., 2020).

Transactional leadership relies on rewards and punishments that act as critical motivators. In contrast, with transformational leadership, a common goal is supported by engaging one person with another in a relationship that raises their level of motivation and morality (Male and Palaiologoi, 2019).

As for the laissez-faire leadership style, the leader needs to be present in decision-making, ignoring his responsibilities and avoiding participation in essential matters and decision-making (Bass and Riggio, 2005).

2.2 Public Policies

A public policy is a set of decisions and actions that result from repeated interactions between public and private actors whose behaviours are influenced by the resources at their disposal and by general (political-institutional system) and specific (scope of intervention) institutional rules.

All public administrative activity is also the execution or development of a public policy. Therefore, when analysing public administration, it is essential to refer to the direct influence that politics, in any regime or era, exerts on it. Thus, the distinction between politics and public administration may seem theoretically clear and understandable, but it becomes highly complicated to separate them (Overeem, 2005).

Among public policies, we have the appointment (recruitment), training and evaluation of leadership positions.

For Madureira (2013), it is evident in the Portuguese case that professionalisation and performance evaluation of leaders are "key aspects" in constructing an administrative reform. In this sense, although the "trust" factor is the starting point for all managerial appointments in Western countries, analysing the example of other countries where this choice is strongly controlled with specific rules is essential.

The statute for managerial staff determines as a requirement for the exercise of functions of senior and middle management "the completion of specific courses for senior management in Public Administration, differentiated, if necessary, according to the level, grade and functional content of the positions held" - Portaria No. 146/2011 of April 7.

The training in leadership skills was defined as a strategic training area by Portaria No. 3431/2019, March 28, from the Minister of Finance (Diário da República, 2nd Series, No. 62, March 28, 2019). It had as its primary framework the leading role that INA plays in the System of Incentives for Innovation in Public Management (SIIGeP) and the need to develop leadership skills in public administration workers to prepare future leaders.

In Portugal, the evaluation is done through the performance management and evaluation system (SIADAP), aimed at contributing to improving the performance and quality of service of the Public Administration, to the coherence and harmony of the action of services, managers, and other workers and to promoting their professional motivation and skills development. It applies to the services of the direct and indirect administration of the state, as well as the necessary adaptations, particularly regarding the powers of the corresponding bodies, to the services of the autonomous regional administration and local government.

2.3 Leadership and Public Policy

From the perspective of Ndalamba (2019), critical success factors can be considered a leadership strategy that can help drive the public policy implementation process. For these authors, leadership becomes central to the implementation of public policy. Following this reasoning, the following hypotheses were formulated:

Hypothesis 1: Leaders' perceptions of leadership differ from those of subordinates.

Hypothesis 2: Middle managers' perceptions of leadership differ from those of senior managers.

Hypothesis 3: The perception of leadership differs according to the area of the organization where it belongs.

Hypothesis 4: Perception of public policy implementation differs from leaders to those led.

Hypothesis 5: The perception of the application of public policies differs depending on the area of the organism where it belongs.

Hypothesis 6: Perception of public policy implementation is influenced by leadership style.

Hypothesis 7: Whether one is a manager or not moderates the relationship between leadership style and public policies.

3. Method

3.1 Procedure

The data collection instrument was a questionnaire of an exploratory nature (Freitas et al., 2000), using a questionnaire already formulated to identify the types of leadership and another of our construction to study the perception of public policies on recruitment, training, and evaluation of leadership positions in the direct administration of the State. This instrument was developed using Google Forms online questionnaire software.

The survey was sent to the central services of the respective Ministries. The survey was targeted at all employees in public functions in the direct administration of the State, whether or not they currently hold management positions.

3.2 Participants

The sample consists of 442 participants, whose ages range between 22 and 69 years ($M = 49.59$; $SD = 9.06$), 281 (63.6%) being female and 161 (36.4%) males. The seniority in the position varies between 1 and 48 years ($M = 13.76$; $SD = 12.44$) and seniority in the organization between 1 and 47 years ($M = 13.23$; $SD = 11.56$).

Among these participants, 122 (27.6) hold managerial positions, of which 35 (28.7%) hold a senior managerial position, 74 (60.7%) hold a middle managerial position, and 12 (9.8%) hold a special career.

The distribution of the participants according to the organization they work for is shown in Figure 1:

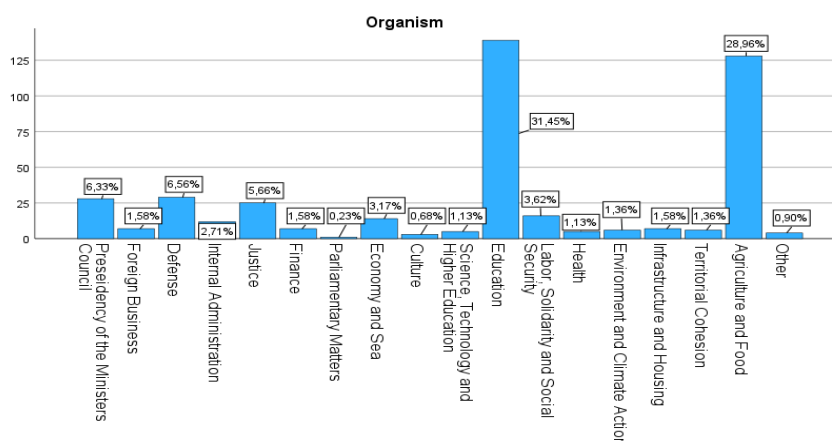


Figure1: Distribution of participants by the organism where they work.

3.3 Data Analysis Procedure

Data were imported from Google Forms into SPSS Statistics 28 software. An exploratory factor analysis (EFA) was initially performed for the public policy perception instrument since it is a new instrument built for this study. The KMO value was calculated, whose value in organisational studies should be greater than .70 (Sharma, 1996).

After the SFA, Confirmatory Factor Analysis (CFA) was performed for that instrument and the other instruments used in this study, using the AMOS for Windows 28 program. A robust maximum likelihood estimation for the public policy instrument was performed for a three-factor model.

For the leadership instrument, separate CFAs were performed for each subscale. A five-factor and a one-factor AFC were performed for the transformational leadership subscale. A two-factor AFC was performed for the transactional leadership subscale; for the laissez-faire leadership subscale, a two-factor and one-factor AFC were performed.

After the CFA, construct reliability, convergent validity, and discriminant validity were calculated for each instrument.

Reliability was then analysed by calculating Cronbach's alpha.

Concerning the study of item sensitivity, the different measures of central tendency, dispersion and distribution were calculated for the different instruments.

Subsequently, descriptive statistics of the variables under study were performed using Student's t-tests for a sample. The association between the variables was studied using Pearson's correlations.

The hypotheses formulated in this study were tested using the t-student test for independent samples, the One-Way ANOVA test, and linear regression after the respective assumptions were verified. The moderating effect was tested using Macro Process 4.2, developed by Hayes (2013).

3.4 Instruments

To measure leadership, we used the instrument developed by Avolio and Bass (2004), consisting of 45 items. This study used only the subscales of transformational, transactional, and laissez-faire leadership. The validity of this instrument was tested by performing a confirmatory factor analysis (CFA) for each subscale.

For the transformational leadership subscale, a five-factor CFA was performed. The adjustment indices obtained are adequate or close to the reference values ($\chi^2/df = 2.39$; GFI = .86; CFI = .93; TLI = .91; RMSEA = .056; SRMR = .242). However, the average variance extracted (AVE) for each factor was found to be less than the square of the correlation between the factors, indicating no discriminant validity. For this reason, a new one-factor AFC was performed. The adjustment indices obtained are adequate ($\chi^2/df = 1.97$; GFI = .94; CFI = .98; TLI = .98; RMSEA = .047; SRMR = .032) and better than the adjustment indices of the five-factor model. Concerning internal consistency, this subscale has a Cronbach's alpha of .96 and construct reliability of .96. As for convergent validity, it presents a Vem value of .58, which can be considered reasonable.

For the Transactional Leadership subscale, a two-factor CFA was performed. After performing the AFC, the adjustment indexes obtained were adequate ($\chi^2/df = 3.48$; GFI = .97; CFI = .96; TLI = .93; RMSEA = .075; SRMR = .077). For internal consistency, a Cronbach's Alpha of .74 was obtained for management by active exception and a .78 for contingent rewards. For construct reliability, a value of .73 was obtained for management by active exception and .76 for contingent rewards. As for convergent validity, both management by active exception (SEM = .41) and contingent rewards (SEM = .45) show low convergent validity. Discriminant validity was verified since the squared high factor correlations are lower than the SEM values of the respective factors.

For the laissez-faire subscale, a two-factor CFA was performed. The adjustment indices obtained are adequate ($\chi^2/df = 2.12$; GFI = .98; CFI = .98; TLI = .97; RMSEA = .050; SRMR = .087). However, the average variance extracted (AVE) for each factor was found to be less than the square of the correlation between the factors, indicating no discriminant validity. For this reason, a new one-dimensional AFC was performed. The adjustment indices obtained are adequate ($\chi^2/df = 1.25$; GFI = .99; CFI = .99; TLI = .99; RMSEA = .024; SRMR = .023). Concerning internal consistency, this subscale has a Cronbach's alpha of .88 and a construct reliability of .87. As for convergent validity, it has a Vem value of .50, which can be considered good.

The instrument to measure the perception of public policies was created by the researchers of this study. It is an instrument composed of nine items distributed over three dimensions: recruitment, training, and evaluation. Since this is a new instrument, an exploratory factor analysis (EFA) was initially performed, where a KMO of .81 was obtained. Bartlett's test of sphericity proved significant ($p < .001$), which indicates that the data come from a multivariate population (Pestana and Gageiro, 2003). The EFA indicated that this instrument comprises three factors that explain 67.76% of the scale's variability. We then performed an AFC that confirmed the existence of three factors since the adjustment indexes obtained are adequate ($\chi^2/df = 2.12$; GFI = .98; CFI = .98; TLI = .97; RMSEA = .050; SRMR = .087).

Only the assessment dimension shows low internal consistency, with a Cronbach's Alpha of .66. The recruitment dimension has a Cronbach's Alpha of .76, and the training dimension has a score of .79.

Regarding construct reliability, all dimensions are higher than .70, ranging from .72 (assessment) to .80 (training). It is also the evaluation dimension that presents a convergent validity (VEM = .48) below .50. The recruitment (VEM = .52) and training (VEM = .57) dimensions show good convergent validity. There is discriminant validity since the squared factor correlation is lower than the VEM values.

About item sensitivity, no item has a median close to one of the extremes, all items have responses in all points, and their absolute values of skewness and shortness are below 3 and 7, respectively, which indicates that they do not grossly violate normality (Kline, 1998).

4. Results

4.1 Descriptive Statistics of the Variables Under Study

Descriptive statistics were performed for the variables under study to understand the position of the answers given by the participants:

The perception of transformational leadership ($t(441) = 15.63$; $p < .001$), leadership by passive exception ($t(441) = 6.63$; $p < .001$) and contingent rewards ($t(441) = 8.90$; $p < .001$) are significantly above the midpoint of the scale.

It should be noted that the leadership style with the highest perception is transformational leadership. The perception of laissez-faire leadership style ($t(441) = -48.41$; $p < .001$).

About public policy, the perception of adequate and transparent recruitment ($t(441) = -10.25$; $p < .001$), as well as the perception of transparent evaluation ($t(441) = -2.29$; $p = .011$), are significantly below the midpoint of the scale. The perception of training is very close to the scale's midpoint ($t(441) = -.46$; $p = .325$).

These results indicate that respondents are unsatisfied with existing public policies on these topics.

4.2 Correlations

Table 1: Association between the variables under study

Variable	1	2.1	2.2	3	4.1	4.2	4.3
1. Transformational Leadership	--						
2.1. Active Exception Management	.37***	--					
2.2. Contingent Rewards	.87***	.38***	--				
Laissez-Faire	-.75***	-.13***	-.65***	--			
4.1. Recruiting	.25***	.16***	.22***	-.12**	--		
4.2. Training	.34***	.09	.26***	-.23***	.42***	--	
4.3. Evaluation	.38***	.17***	.36***	-.28***	.36***	.45***	--

Note. ** $p < .01$; *** $p < .001$

The results indicate that transformational leadership is positively and significantly associated with management by active exception, contingent rewards, recruitment, training, and evaluation. On the other hand, it is negatively and significantly associated with laissez-faire leadership.

Active exception management is positively and significantly associated with recruitment and evaluation but negatively and significantly associated with laissez-faire leadership. Contingent rewards are positively and significantly associated with recruitment, training, and evaluation but negatively and significantly associated with laissez-faire leadership.

Laissez-faire leadership is negatively and significantly associated with recruitment, training, and evaluation.

4.3 Hypothesis Tests

Table 2: T-test results (H1)

Dependent Variable	t	gl	p	d	Led		Leader	
					Mean	SD	Mean	SD
Transformational Leadership	-14.65***	421.41	< .001	1.16	2.41	.89	3.33	.42

Dependent Variable	t	gl	p	d	Led		Leader	
					Mean	SD	Mean	SD
Active Exception Management	-2.24*	440	.025	.24	2.20	.79	2.39	.80
Contingent Rewards	-14.25***	335.69	< .001	1.26	2.11	.88	3.13	.57
Laissez-Faire	28.66***	379.164	< .001	.93	1.37	.81	.76	.46

Note. * $p < .05$; *** $p < .001$

The perception of transformational leadership, management by active exception, contingent rewards, and laissez-faire leadership style differ significantly between leaders and followers. Leaders have a higher perception of transformational leadership, management by active exception, and contingent rewards than followers. In turn, the followers perceive passive exception management and laissez-faire leadership more than the leaders. Hypothesis 1 was confirmed.

Table 3: One Way ANOVA test results (H2)

Dependent Variable	F	p	Superior		Intermediate		Special Career	
			Mean	SD	Mean	SD	Mean	SD
Transformational Leadership	2.35	.100	3.42	.38	3.27	.42	3.46	.44
Active Exception Management	.18	.839	2.34	.76	2.40	.80	2.50	.98
Contingent Rewards	.60	.549	3.17	.47	3.08	.60	3.23	.64
Laissez-faire	1.34	.265	.67	.46	.81	.46	.65	.42

Concerning the perception of the leadership of the holders of management positions, the results indicate that this is similar depending on the position held. The results do not support hypothesis 2.

The results indicate to us that the organism the participant is in has a statistically significant effect on transformational leadership ($F(16, 424) = 1.51$; $p = .013$), contingent rewards ($F(16, 424) = 1.75$; $p = .038$) and laissez-faire leadership ($F(16, 424) = 1.72$; $p = .040$). The results support hypothesis 3 (Figure 2).

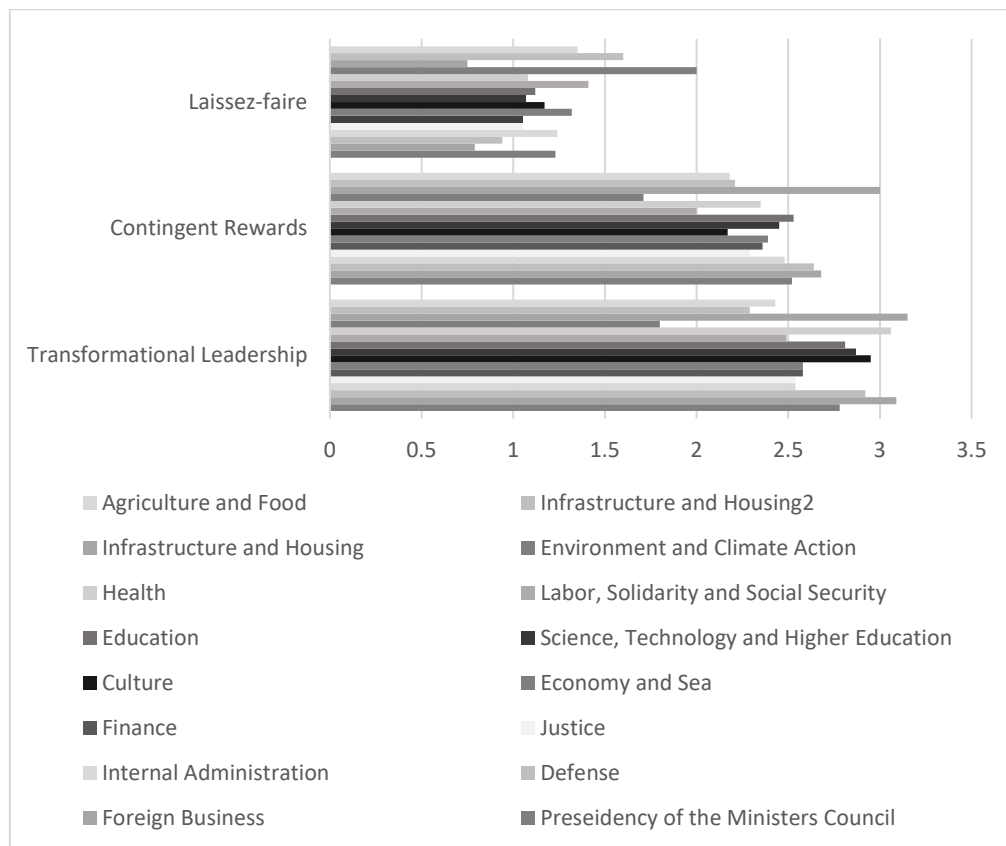


Figure 2: Distribution of leadership styles as a function of organism

Table 4: T-test results (H4)

Dependent Variable	t	gl	p	d	Liderado		Líder	
					Média	DP	Média	DP
Recruitment	-1.22	243.12	.247	.12	2.53	.92	2.64	.83
Training	-.69	266.08	.528	.07	2.96	1.06	3.03	.87
Evaluation	-5.78***	288.59	< .001	.54	2.73	1.12	3.29	.84

Note. *** $p < .001$

Only the perception of an adequate evaluation differs significantly between leaders and subordinates. When compared to subordinates, leaders perceive that public policies for evaluating leaders are more adequate. This hypothesis is partially confirmed.

The organism the participant is in has a statistically significant effect on recruitment ($F(16, 424) = 2.67$; $p < .001$), training ($F(16, 424) = 2.43$; $p = .002$), and evaluation ($F(16, 424) = 2.68$; $p < .001$). The results support hypothesis 5 (Figure 3).

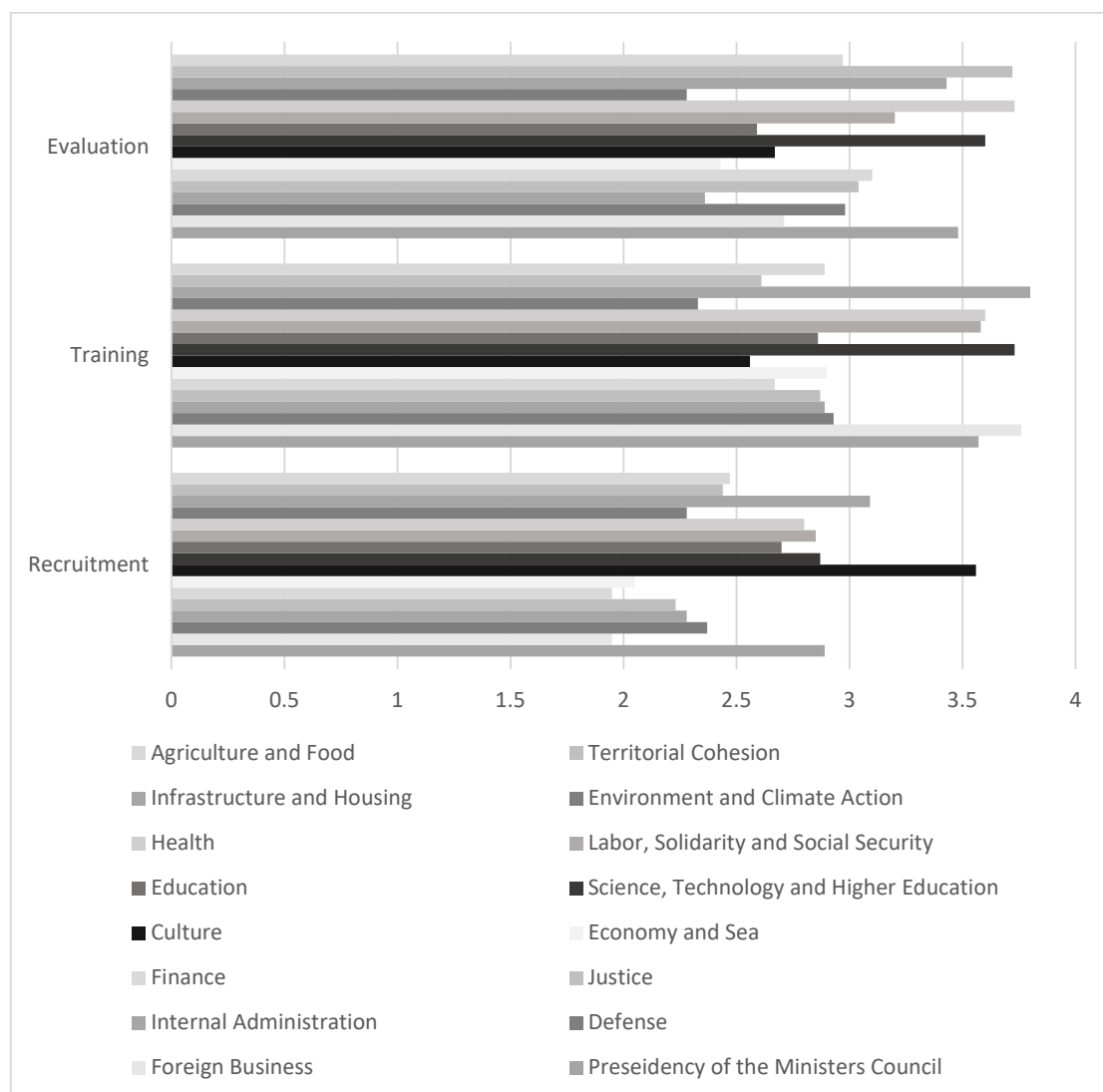


Figure 3: Distribution of the perception of public policies according to the organism

Table 5: Association between transformational leadership and public policies

Dependent Variable	Variável Dependente	F	p	R ²	β	p
Transformational Leadership	Recruitment	29.91***	< .001	.06	.25***	< .001
	Training	57.79***	< .001	.11	.34***	< .001
	Evaluation	73.57***	< .001	.14	.38***	< .001

Note. *** p < .001

The results indicate a positive and significant association between transformational leadership and the perception of a correct recruitment process. The model is statistically significant (F (1, 440) = 29.91 p < .001) and explains 6% of the variability in the dependent variable.

Transformational leadership is also positively and significantly associated with the perception of proper training). The model is statistically significant (F (1, 440) = 57.79; p < .001) and explains 11% of the variability in the dependent variable.

There is also a positive and significant association between transformational leadership and the perception of a fair evaluation process. The model is statistically significant (F (1, 440) = 32.67; p < .001) and explains 14% of the variability in the dependent variable.

Table 6: Effect of leadership by active management and contingent rewards on public policy

Independent Variable	Dependent Variable	F	p	R ² _a	β	p
Active Exception Management	Recruitment	12.80***	< .001	.05	.09	.077
Contingent Rewards					.18***	< .001
Active Exception Management	Training	15.66***	< .001	.06	-.01	.778
Contingent Rewards					.26**	< .001
Active Exception Management	Evaluation	32.38***	< .001	.13	.03	.479
Contingent Rewards					.33***	< .001

Note. ** p < .01; *** p < .001

Contingent reward leadership is positively and significantly associated with the perception of a correct recruitment process. The model is statistically significant (F (3, 438) = 12.80; p < .001) and explains 5% of the variability in the dependent variable.

Contingent reward leadership is positively and significantly associated with the perception of adequate training. The model is statistically significant (F (3, 438) = 15.66; p < .001) and explains 6% of the variability in the dependent variable.

Contingent reward leadership is positively and significantly associated with perceived fair evaluation. The model is statistically significant (F (3, 438) = 32.38; p < .001) and explains 13% of the variability in the dependent variable.

Table 7: Effect of laissez-faire leadership on public policy

Independent Variable	Dependent Variable	F	p	R ²	β	p
Laissez-faire	Recruitment	6.78***	.010	.01	-.12***	.010
	Training	23.96***	< .001	.05	-.23***	< .001
	Evaluation	36.92***	< .001	.08	-.28***	< .001

Note. *** p < .001

The results indicate a negative and significant association between the laissez-faire leadership style and the perception of a correct recruitment process. The model is statistically significant ($F(1, 440) = 6.78$; $p = .010$) and explains 1% of the variability in the dependent variable.

The laissez-faire leadership style is also negatively and significantly associated with the perception of proper training. The model is statistically significant ($F(1, 440) = -23.96$; $p < .001$) and explains 5% of the variability in the dependent variable.

A negative and significant association exists between laissez-faire leadership style and the perception of a fair evaluation process. The model is statistically significant ($F(1, 440) = 36.92$; $p < .001$) and explains 8% of the variability in the dependent variable.

Table 8: Results of the moderating effect

Variables	B	SE	t	p	95% CI
Active Exception Management → Training ($R^2 = .02$; $p < .001$)					
Constant	2.99***	.05	62.15***	< .001	[2.89, 3.08]
Active Exception Management	.11*	.06	1.77*	.077	[-.01, .23]
Manager	.07	.11	.64	.523	[-.14, .28]
AEM*Manager	-.25*	.13	-1.88*	.061	[-.52, .01]
Contingent Rewards → Training ($R^2 = .09$; $p < .001$)					
Constant	3.04***	.06	53.31***	< .001	[2.93, 3.16]
Contingent Rewards	.31***	.06	4.93***	< .001	[.18, .43]
Manager	-.09	.15	-.61	.542	[-.40, .21]
CR*Manager	-.32*	.17	-1.95*	.052	[-.65, .00]
Laissez-faire → Recruitment ($R^2 = .02$; $p < .001$)					
Constant	2.77***	.09	28.41***	< .001	[2.57, 2.96]
Laissez-faire	-.18***	.06	-2.86***	.004	[-.30, -.06]
Manager	-.28	.18	-1.50	.851	[-.63, .09]
LF*Manager	.37**	.19	1.97**	.049	[.01, .74]
Laissez-faire → Training ($R^2 = .06$; $p < .001$)					
Constant	3.44***	.10	32.08***	< .001	[3.24, 3.66]
Laissez-faire	-.36***	.06	-5.30***	< .001	[-.49, -.23]
Manager	-.43**	.20	-2.10**	.036	[-.82, -.03]
LF*Manager	.36*	.21	1.76*	.078	[-.04, .77]

Note. * $p < .10$; ** $p < .05$; *** $p < .01$

Being in a managerial position was found to have a marginally significant moderating effect on the relationship between leadership by active management and training ($B = -.25$; $p = .061$).

The fact that the participant holds a managerial position has a marginally significant moderating effect on the relationship between contingent rewards and the perception of adequate training ($B = -.32$; $p = .052$).

There is a moderation effect, by whether the participant holds a managerial position, on the relationship between laissez-faire leadership and recruitment ($B = .37$; $p = .049$) and between laissez-faire leadership and recruitment ($B = .36$; $p = .078$).

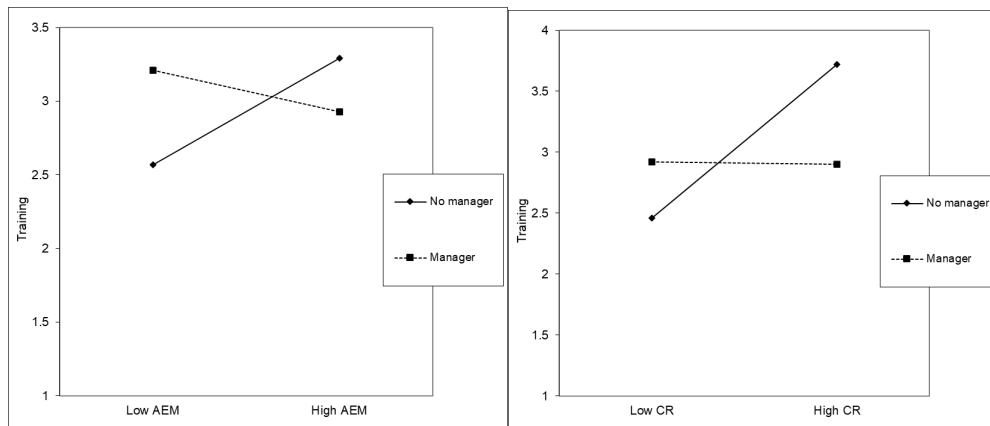


Figure 4: AEM x Manager Interaction and CR x Manager Interaction and Training

For participants who do not hold a managerial position, when compared to participants who do hold a managerial position, leadership by contingent rewards and laissez-faire becomes relevant to enhance the perception of adequate training (Figure 4).

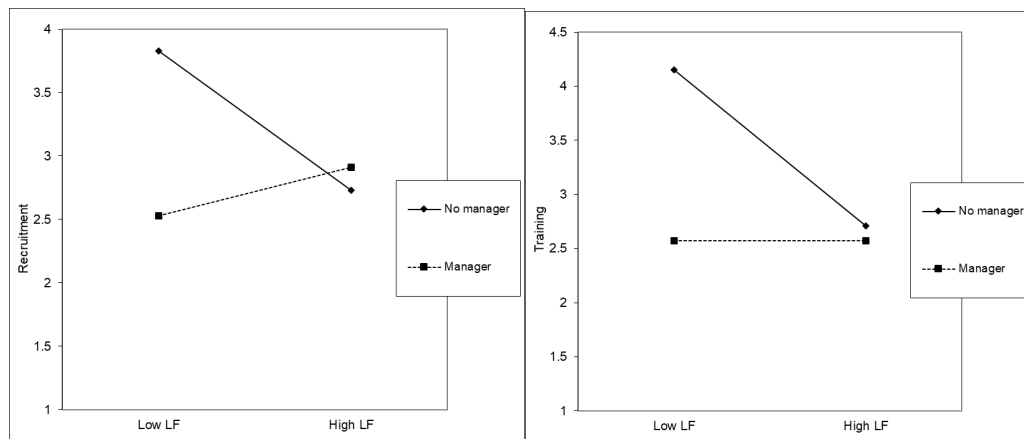


Figure 5: LF x Manager Interaction, Recruitment and Training

For participants who hold a managerial position, when compared to participants who do not hold a managerial position, laissez-faire leadership becomes relevant to enhance the perception of an adequate recruitment and training process (Figure 5).

5. Discussion and Conclusions

This study aimed to study the association between leadership and public policy and whether being a leader moderates this relationship.

Hypothesis 1 was proven since being a leader or being led significantly affects leadership style. Leaders showed a higher perception of all leadership styles except the laissez-faire. These results align with the literature (Versiani et al., 2017), whose study found differences in the perception of leadership between leaders and followers.

Hypothesis 2 was not supported. Hypotheses 3 and 5 were proven, as it was shown that the agency where participants work significantly affects the perception of leadership style and public policies. Among the agencies that stand out as having participants with a higher perception of leadership and public policy are the Ministry of Infrastructure and Housing and the Ministry of Health.

Hypothesis 4 was only partially proven since being a leader or subordinate only significantly affected performance evaluation, with the leader's perception being significantly higher than the subordinate's perception.

As expected, hypothesis 6 was proven, finding that all leadership styles are significantly associated with public policy. These results align with what is stated in the literature that leadership style can be considered a critical factor in public policy implementation (Ndalamba, 2019).

Finally, as expected, a moderating effect was found. The fact that the participant does or does not hold a managerial position moderates the relationship between leadership by active management and training, the relationship between rewards and training, the relationship between laissez-faire leadership and training, and the relationship between laissez-faire leadership and recruitment. As seen among the public policies, adequate training is the one that becomes most sensitive.

According to the findings, followers and leaders have different perceptions of evaluation and leadership style. Significant disparities were discovered in how they perceived transformational leadership, contingent rewards, laissez-faire, recruitment, training, and evaluation within their organizations. The degree to which the person is in a managerial position affects the strength of the relationship between leadership style and public policies.

This study reveals the prevalent leadership style in public administration and how it relates to societal policy.

References

- Bass, B.M., & Avolio, B.J. (1994). Improving organizational effectiveness through transformational leadership. Sage Publications.
- Bass, B.M., & Riggio, R.E. (2005). Transformational Leadership (2nd ed.). Psychology Press.
<https://doi.org/10.4324/9781410617095>
- Burns, J.M.G. (1978). Leadership. Harper & Row.
- Carvalho, E. (2013). Decisão na Administração Pública: diálogo de racionalidades. *Sociologia, Problemas e Práticas*, 73, 131-148.
- Clawson, J.G. (2003). Level three leadership: Getting below the surface. Prentice Hall. Upper Saddle River.
- Despacho n.º 3431/2019, de 28 de março (2019). Novas áreas estratégicas de formação. Consultado a: 12/04/2022.
Disponível em: <https://dre.pt/home/-/dre/121685462/details/maximized>
- Freitas, H., Oliveira, M., Saccol, A. Z., Moscarola, J. (2000) O método de pesquisa survey, *Revista de Administração da USP, RAUSP*, São Paulo, v. 35, n. 3, p. 105-112. ISSN 0080-2107.
- Gill, R. (2011). Theory and practice of leadership, SAGE Publications.
- Goula, A., Stamouli, M. A., Latsou, D., Gkioka, V., & Kyriakidou, N. (2021). Learning Organizational Culture in Greek Public Hospitals. *International journal of environmental research and public health*, 18(4), 1867.
<https://doi.org/10.3390/ijerph18041867>
- Hayes, A. F. (2013). An introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York, NY: Guilford Press.
- Latham, J. (2014). Leadership for Quality and Innovation: Challenges, Theories, and a Framework for Future Research. *Quality Management Journal* 21(1), 22 DOI: 10.1080/10686967.2014.11918372
- Madureira, C. (2013). Profissionalização e avaliação dos dirigentes de topo na Administração Pública: o caso de Portugal. *Handbook da Administração Pública*.
- Male, T., & Palaologou, I. (2019). Sustaining the comprehensive ideal: The Robert Clack School. Palgrave McMillan.
- Mehrad, A., Gonzalez-Olmedo, M., & Fernández-Castro, J. (2020). A systematic review of leadership styles, work engagement and organizational Support. *International Journal of Research in Business and Social Science*, 9(4):66-77. DOI: 10.20525/ijrbs.v9i4.735
- Ndalamba, K.K. (2019), "An exploration into the problematic public policies and the leadership challenge for socio-economic transformation in South Africa", *International Journal of Excellence in Government*, 1 (1), 37-47.
<https://doi.org/10.1108/IJEG-09-2018-0003>
- Overeem, P. (2005). The value of the dichotomy: politics, administration and the political neutrality of administration. *Administrative Theory and Praxis*, 27, 311-330;
- Portaria n.º 146/2011, de 7 de abril (2011). Estatuto do pessoal dirigente. (Accessed at 01/05/2022).
<https://dre.pt/pesquisa/-/search/278038/details/maximized>
- Rodrigues, M & Silva, P. (2016). A constituição e as políticas públicas em Portugal. *Sociologia Problemas e Práticas*. 23-32.
- Sarachek, B. (1968). Greek concepts of leadership. *The Academy of Management Journal*, 11 (1), 39-48.
- Sharma, S. (1996). Applied Multivariate Techniques. John Wiley and Sons, New York.
- Versiani, F., Caeiro, M. L., Neto, A. C. (2017). Líder versus liderado? Perceções a partir do GIRD gerencial. *Revista de Administração FACES Journal*, 16, 3, 88-104, <https://doi.org/10.21714/1984-6975FACES2017V16N3ART4104>

Neurofinance: Exploratory Analysis of Stock Trader's Decision-Making Process by Real-Time Monitoring of Emotional Reactions

Hsin-Tzu Hsu and João Alexandre Lobo Marques

Laboratory of Applied Neuroscience, University of Saint Joseph, Macao, China

amy.hsu@usj.edu.mo

alexandre.lobo@usj.edu.mo

Abstract: Human emotions can be associated with decision-making, and emotions can generate behaviors. Due to the fact that it could be biased and exhaustively complex to examine how human beings make choices, it is necessary to consider relevant groups of study, such as stock traders and non-traders in finance. This work aims to analyze the connection between emotions and the decision-making process of investors and non-investors submitted to the same set of stimuli to understand how emotional arousal might dictate the decision process. Neuroscience monitoring tools such as Real-Time Facial Expression Analysis (AFFDEX), Eye-Tracking, and Galvanic Skin Response (GSR) were adopted to monitor the related experiments of this paper and its accompanying analysis process. Thirty-seven participants attended the study, 24 were classified as stock traders, and 13 were non-traders; the mean age for the groups was 35 and 25, respectively. The designed experiment initially disclosed a thought-provoking result between the two groups under the certainty and risk-seeking prospect theory; there were more risk-takers among non-investors at 75%, while investors were inclined toward certainty at 79.17%. The implication could be that the non-investing individuals were less complex in thought and therefore pursued higher returns besides a high probability of losing the game. In addition, the automatic emotion classification system indicates that when non-investors confronted a stock trending chart beyond their acquaintance or knowledge, they were psychologically exposed to fear, anger, sadness, and surprise. On the contrary, investors were detected with disgust, joy, contempt, engagement, sadness, and surprise, where sadness and surprise overlapped in both parties. Under time pressure conditions, 54.05% of investors or non-investors tend to make decisions after the peak(s) of emotional arousal. Variations were found in the deciding points of the slopes: 2.70% were decided right after the peak(s), 37.84% waited until the emotions turned stable, and 13.51% were determined as the emotional indicators started to slide downwards. Several combinations of emotional responses were associated with decisions. For example, negative emotions could induce passive decision-making, in this case, to sell the stock; nevertheless, it was also examined that as the slope slipped downwards to a particular horizontal point, the individuals became more optimistic and selected the "BUY" option. Future works may consider expanding the study to larger sample size, different demographic groups, and other biometrics for further analysis and conclusions.

Keywords: Neuroscience, Decision-making, Emotions, Behaviour, Physiological, Investors

1. Introduction

People believe that we make countless choices of free will daily. Is it a fact? Philosophers contain various views on free will, biologically and metaphysically. In simple terms, free will defines the ability or discretion to choose. Free will therefore does not adequately explain why we act as we do (Kolb and Whishaw, 2014). We may think that the most obvious explanation for our behavior is simply that we want to. The description assumes that we act in a state of free will- that we always have a choice (Kolb and Whishaw, 2014). Nevertheless, within the scope of science, free will is a vague term and does not explicitly clarify how choices are made.

Humans are born with freedom of choice, yet, the determinant behind the scene makes investigating decision-making critical and fascinating to expand the study further to identify the potential influencers and how the outcomes would differ. Hence, this research aims to fill the gap by identifying and evaluating how emotional responses affect investors' and non-investors' decisions and how stimuli may link with emotional arousal via integrating multi-modal neuroscience-based tools.

People often confront choices that could be either fearful, life-changing, or life-threatening, making it essential to discover what is guiding the process of judgment-making capacity. Although logic plays a role, much of decision-making is driven by emotion (Gordon and Arian, 2001). Many empirical studies since the 1970s revealed the domination of emotions involves judgments and decisions under diverse psychological aspects rendering people's perception, especially under a particular state of how one feels, namely, joy, anger, anxiety, fear, disgust, and sadness (Lerner *et al.*, 2015). Therefore, emotions can determine either means, sometimes beneficial or harmful drivers of decision-making.

1.1 Research Question

The previous discussions lead us to define the research question:

- *Question:* To what extent does active monitoring of stimuli reactions attempt to deepen our understanding of the investors' and non-investors' decision-making process based on emotions?

To answer the question, the experiment sequence, questionnaire, and content must be logical and acknowledgeable by the readers, accompanied by a reasonable time limit to obtain the expected effects. Creating a time gap or break time between each sub-design frame was vital to capture respondents' instant reactions to the corresponding setting and prevent perplexing emotional outcomes.

2. Methodology

Our research aim is to reveal the process of decision-making in connection with emotions which plays a vital role in human behavior. Emotion can dictate behavior that utterly influences one's decision outcomes. Yet, the veracity of choices shall not be the scope of discussion in the study. We, in turn, focus on the transition of emotions through external factors or impacts. This thesis emphasizes our study from the stock traders' perspective. The research also collected data from non-traders to allow comparative analyses. Multiple non-intrusive physiological techniques were applied to respondents to explore and examine the probable development of emotions in decision-making.

2.1 Research Design

This work is experimental research in which, according to Skinner (1966), the task of empirical analysis is to explore all the variables of which the probability of response is a function. By conducting the study, we can have firm control over variables to obtain results; more significantly, our collected data could be utilized to build new research ideas for further studies due to the limitation of sample size in the Macao, China region.

2.1.1 Experiment model

The research adopted qualitative and quantitative analysis based on data collected through a self-report questionnaire, a computer-assisted survey, and a short video with a series of questions. The questionnaire and the survey were designed to understand participants' demographic characteristics for further data analysis. The survey and a short video followed after the participants completed the questionnaire. Additionally, the video aimed to experiment with respondents' feedback on an acute laboratory stressor. In reality, traders frequently encounter time pressure and involve time-constraint judgment while executing trading decisions. Therefore, the experimentation was required to incorporate scenarios to monitor emotional responses regarding choice under certainty, risk reflection effect, emotional arousal, time pressure, and emotional manipulation. With the support of a biofeedback monitoring system, the experimental structure made it possible to examine the reactions between traders versus non-traders and their attitudes to decision-making while confronting external impacts. The experiment was tailored to monitor the responses, potential emotional migration, and their related decision-making process while fronting virtuous and poor options and stress. Participants were informed to answer a few questions by selecting the answers they assumed were most feasible to their belief displayed in the video. The experimental questions contain individuals assessing loss and gaining perspective with time pressure, stimuli, and stimuli manipulation.

2.1.2 Research sample

Participants comprised 23 women and 14 men ($n = 37$) aged 18 to 72. Seven respondents were English illiterate; thus, Mandarin's version of the experiment material was arranged, and the others were presented with an English version. Among the respondents, 24 were identified as stock or index or futures traders, and 13 were identified as non-traders. The mean age for investors and non-investors was 35 and 25, respectively.

The scope of the experiment aimed to study the decision-making process in connection with the emotional reactions and their alterations of humans. In his publication of *Human Emotions*, Izard stated that emotions tend to affect all aspects of each individual, the whole person (Izard, 2013). The point of departure is then the position that we are essentially organisms of a particular animal species, namely *homo sapiens*, so that the locus of mental life that we reidentify when we reidentify a person over time is just an instance of a biological kind, a kind whose members typically exhibit complex mental life (Johnston, 1987). Even though every being is born with distinct characteristics, the fundamental cognitive and perception scheme is innate, along with measures of emotional impacts and contrasting decision outcomes. Thus, the number of participants shall be deemed plausible to demonstrate a representative fraction of the beings.

2.1.3 Experiment design

The experiment consists of four phases: initially presented with the choice options under certainty and risk; the second, third, and fourth parts aimed at monitoring participants' trading decisions and their real-time emotional reactions (AFFDEX) together with eye-tracker and Galvanic Skin Response (GSR) monitoring.

Figure 1 demonstrates the roadmap of the experiment by employing the below circumstances:

1. Decision-Making and process under certainty (from the prospect theory)
2. Decision-Making and process under risk (from the prospect theory)
3. Decision-Making and emotions through the unacquainted information
4. Decision-Making and emotions under time strain
5. Decision-Making process under emotional manipulation

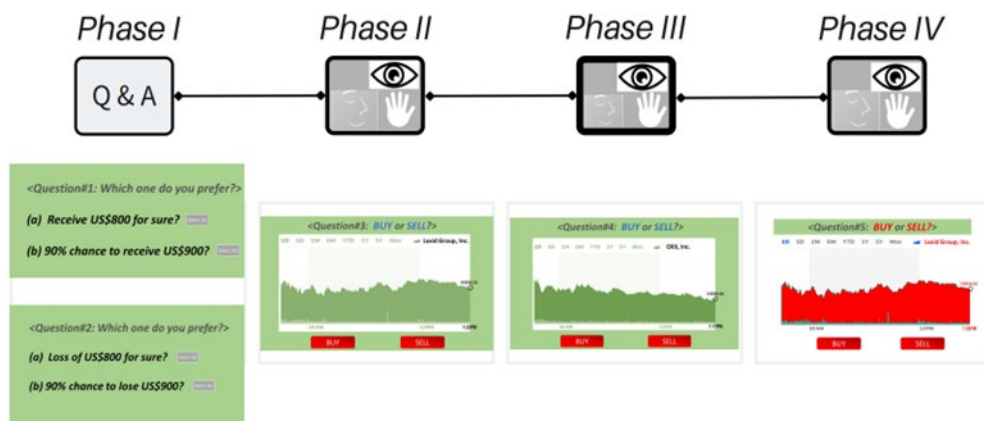


Figure 1: Experiment Roadmap including Four Phases. The Monitoring Tools: Eye-tracking, AFFDEX, and GSR

Phase I depicted two questions, as presented in Figure 2, about risk-averse versus risk-seeking; each question is set to a ten-second time limit. According to Kahneman (2011), humans opt for certainty and dislike risks; however, when facing poor choices, they are inclined to transform into risk-seeking. Therefore, in this phase, we proposed the results would lead to the same outcomes as the theories based on the respondent's responses.

Question #1: Which do you prefer?
(a) Receive US\$800 for sure?
(b) 90% chance to receive US\$900?
Question #2: Which do you prefer?
(a) Loss of US\$800 for sure?
(b) 90% chance to lose US\$900?

Figure 2: Illustration of Risk-Averse and Risk-Seeking (Kahneman, 2011)

As demonstrated in Figure 1, *phases II* (Question #3) and *III* (Question #4) each contained one stock trading chart, and the time duration between both steps was designed with a 5-second variation to create time pressure; the former phase was a 10-second chart, while the latter was 5 seconds. In this stage, the first presumptions were to acquire more significant emotional reactions from non-investors due to their unacquainted with investing activities. The second strategy was implementing the time contrast as a stimulus to monitor the vibrant dissimilarities among investors and non-investors. Besides, emotional arousals such as anxiety, irritation, fear, and frustration were significantly expected.

Phase IV (Question #5) implemented the identical chart as *Phase II* with the same timeframe of 10 seconds. Nonetheless, the trending color was modified to red to explore if the specific alteration in the theme color would be a factor of emotional stimuli of excitement. In addition, we further expected to verify if this color alteration would arouse more active purchasing intention, and we anticipated the majority of the participants would have the impulse to hit the buy button. Red can be associated with excitement, considered an arousing and stimulating color (Crowley, 1993).

3. Results and Discussion

Data evaluations and the demonstration of the results acquired from the experiment were based on the four phases of the investigation of the experiment.

3.1 About Respondents

The final sum of participants is 37 ($n = 37$), ranging from 18 to 72 years ($M = 34$, $SD = 14$). The distribution between investors and non-investors was 24 (64.86%) and 13 (35.14%). Among all the attendees, 5.41% ($n=2$) were Western, and the others were all Asian; the distribution of male and female was 38% ($n=14$) and 62% ($n=23$), with a total of 7 (18.92%) participants being English illiterate. The experiments were conducted from March 3, 2023, through March 24, 2023.

3.2 Phase I – Prospect Theory – Questions #1 & #2

Prospect theory (Kahneman, 2011) explicitly addresses that humans are advocates when confronting circumstances under certainty and being risk-takers when facing relatively poor options.

Among the 24 investors, 79.17% preferred assurance when an option of certainty was available, against 62.50% who were more risk-taking, where all the possibilities appeared to be unwanted. The result on the investors' side undoubtedly supports the theory in that most people act to match the view. On the contrary, a reversal result was found in non-investors, where 50% opted for certainty, and 75.00% were risk-taking. Figure 3 below demonstrates the variation obtained between the two groups.

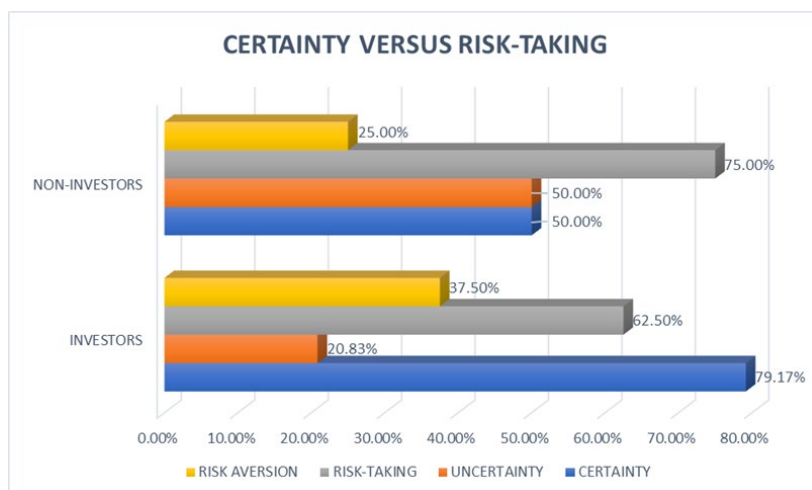


Figure 3: Variations of Non-Investors & Investors' Choices Between Certainty & Risk-Taking

Nevertheless, observing the outcome from a different approach in a greater dimension showed that people who opted for certainty were not necessarily adventuresome. One possibility for the variation in investors could be that a certain percentage of people believe "losing less is gaining" and walk away with what is already in their pocket. They do not believe taking a higher risk to obtain a probability of loss is essential, even if the dollar amount is sufficiently attractive.

Another finding further revealed that the non-investors could be the braver risk-seekers as they could have uncomplicated mindsets. The questions could catch their authentic thoughts off-guard, unlike investors who are frequently convinced they are more sophisticated in investing activities; hence, they tend to produce far more complex thoughts than others.

3.3 Results for Emotional Arousal – GSR Monitoring

Since skin conductance is not under human conscious control, sweat gland activity increases and increases skin conductance once the emotion is highly aroused. Peak occurrences reveal if any peaks can be identified throughout the experiment.

3.3.1 Peak occurrences

Figure 4.13 represents the experiment's peak occurrences of investors and non-investors from the Survey stage through Phase IV. 29.17% ($n=17$) of investors detected no peaks, while 29.17% ($n=7$) detected peaks. On the contrary, positive peak occurrences in non-investors amounted to 46.15% ($n=6$) and 53.85% ($n=7$) without peak

occurrences. The group of non-investors demonstrated a higher percentage of peak occurrences of 46.15% than the investors' 29.17%.

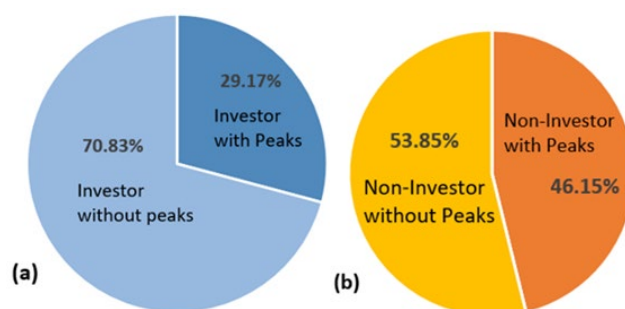


Figure 4: (a) Peak Occurrences on Investors (b) Peak Occurrences on Non-Investors

Table 1: Investor Peak Occurrences by Stimuli

Stimuli	Investors with Peaks (n)	Investors with Peaks (%)	Investors with no Peaks (n)	Investors with no Peaks (%)
Survey	7	29.17%	17	70.83%
Q1: Decision-Making under Certainty	4	16.67%	20	83.33%
Q2: Decision-Making under Risk-Taking	4	16.67%	20	83.33%
Q3: Emotions & Decision-Making under Unacquainted Content	6	25.00%	18	75.00%
Q4: Emotions & Decision-Making under Time Pressure	3	12.50%	21	87.50%
Q5: Emotions & Decision-Making under Different Color Scenes	4	16.67%	20	83.33%
Note: total n = 24				

Table 2: Non-Investor Peak Occurrences by Stimuli

Stimuli	Non-Investors with Peaks (n)	Non-Investors with Peaks (%)	Non-Investors with no Peaks (n)	Non-Investors with no Peaks (%)
Survey	5	38.46%	8	61.54%
Q1: Decision-Making under Certainty	3	23.08%	10	76.92%
Q2: Decision-Making under Risk-Taking	4	30.77%	9	69.23%
Q3: Emotions & Decision-Making under Unacquainted Content	4	30.77%	9	69.23%
Q4: Emotions & Decision-Making under Time Pressure	1	7.69%	12	92.31%
Q5: Emotions & Decision-Making under Different Color Scenes	2	15.38%	11	84.62%
Note: total n = 13				

Tables 1 and 2 represent both groups' comprehensive peak occurrences analysis by stimuli with the number of respondents with peaks.

The peak occurrences comparison by stimuli amongst two groups is demonstrated in Figure 5. The result shows that a higher percentage of peak detections were captured on non-investors during the experiment, except in Q4 and Q5: decision-making under time pressure and in different color scenes. Investors revealed a slightly higher peak percentile in decision-making under time pressure and decision-making under different color scenes, with variations of 4.81% and 1.29% from non-investors, respectively. A weightier variation of 14.1% between the two groups can be located in Q2: decision-making under risk in which non-investors were exposed to more peaks. The outcomes were less significant on the remaining questions, with less than a 10% difference for each stimulus.

According to Figure 5, it is probable to presume that non-investors were more vulnerable to generating a higher probability of peaks in terms of their state of emotions initiated from the survey section through Q3. Nonetheless, investors were exposed to higher peaks of 12.50% under Q4: decision-making under time pressure, suggesting that the respondents in this group were experiencing higher emotional elevations than non-investors at 7.69%.

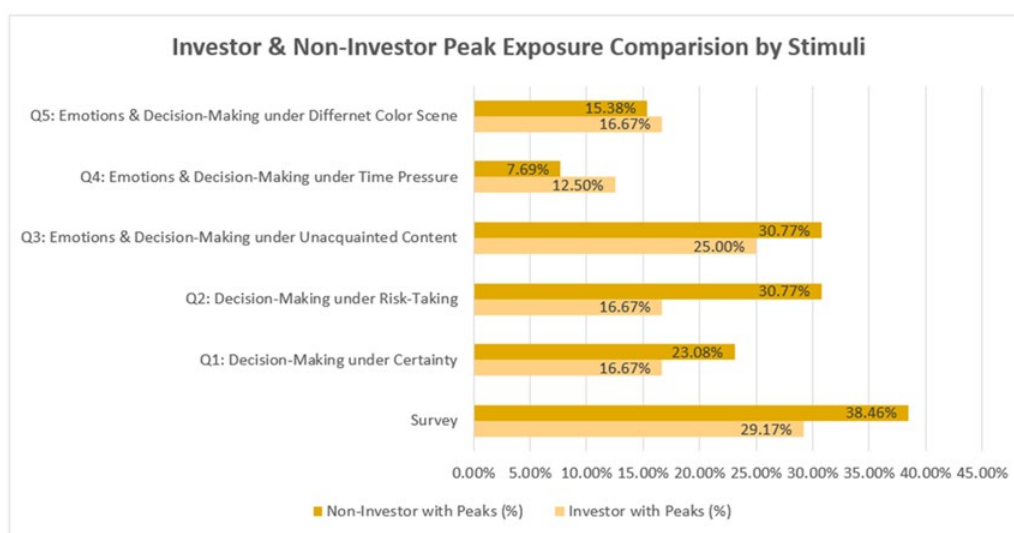


Figure 5: Investor & Non-Investor Peak Occurrences Comparison by Stimuli in Percentage

3.4 Results for Emotions Detection - AFFDEX

With the integration of AFFDEX, it can capture facial expressions and translate them into seven emotions: joy, surprise, anger, fear, sadness, disgust, and contempt. The facial expression analysis was adopted to examine participants' emotional states under four phases of stimuli. According to Ekman and Cordaro (2011), these primary emotions are a set of stimuli that have influenced beings for tens of thousands of generations. In the meanwhile, the facial expression analysis also incorporates the detection of engagement as well as attention.

The mechanism of affirming an emotion under the analysis originates from the 30 consecutive emotional frames per second as a threshold, that is, the duration of the threshold of 30ms. Hence, the results were accounted for when greater than or equal to a duration threshold of 30ms.

Figure 6 represents the percentile of the seven emotions among the investors. It is readily observable that the emotion of fear dominated a higher percentage during the entire experiment, ranging from 53.3% to 79.1%. Fear (53.3%) and surprise (31.26) were expressed in the survey section. Under the decision under certainty, fear (69.64%) occupied the highest percentile, accompanied by minor sadness (14.00%). It is also worth noting that the prevalence of emotions such as fear and joy occurred with comparable share under two stimuli: decision under risk-taking and decision under time pressure, at 51.42% versus 32.93% and 58.15% versus 36.52%, respectively, although the fear and joy increased by 6.73% and 3.59% under decision under time pressure. Investors were also exposed to greater fear (57.47%) while viewing the stock trending chart in the decision under unacquainted content, coexisting with minor sadness (18.58%) as well as joy (14.37). Finally, the group demonstrated exceptionally higher fear in the decision under the color framing section 79.17%; here, we observed a 21.70% increase in fear to 79.17% compared with Phase II, decision under unacquainted content.

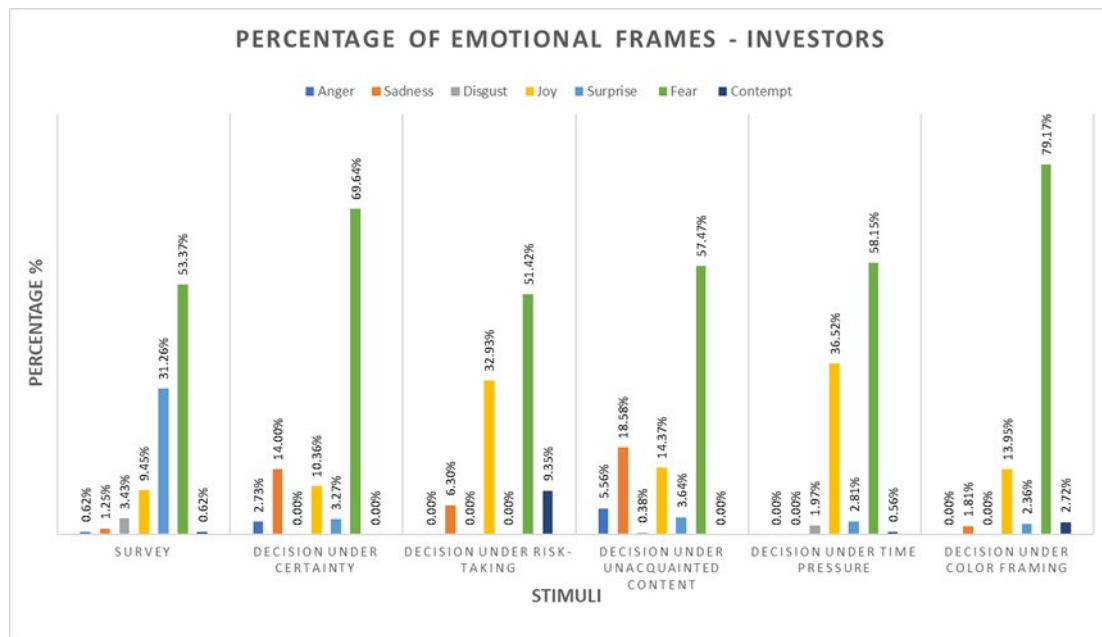


Figure 6: Percentage of Emotional Frames Detected from Investors During the Experiment (≥ 30 ms)

Figure 7 illustrates the emotional scale of the non-investor throughout the experiment. In contrast to investors, the non-investors group revealed a higher percentile of sadness (36.64%~75.93%) and surprise (49.79%~64.58%) during the experiment. The group was exposed to a relatively large scale of surprise (49.79%) and fear (46.44%) while taking the survey. Sadness occupied 50.00% of the decision under certainty, with fear at 27.72%. Moreover, sadness surged by 20.14% to 71.14% in the decision under risk-taking. Sadness remained dominated the decision under unacquainted content at 36.64%. With the stimulus of decision under time pressure applied, the emotions migrated to surprise (64.58%) and fear (28.13%). Lastly, in the decision under color framing, sadness is observed to increase in this group by 39.29% to 75.93% compared with the decision under unacquainted content.

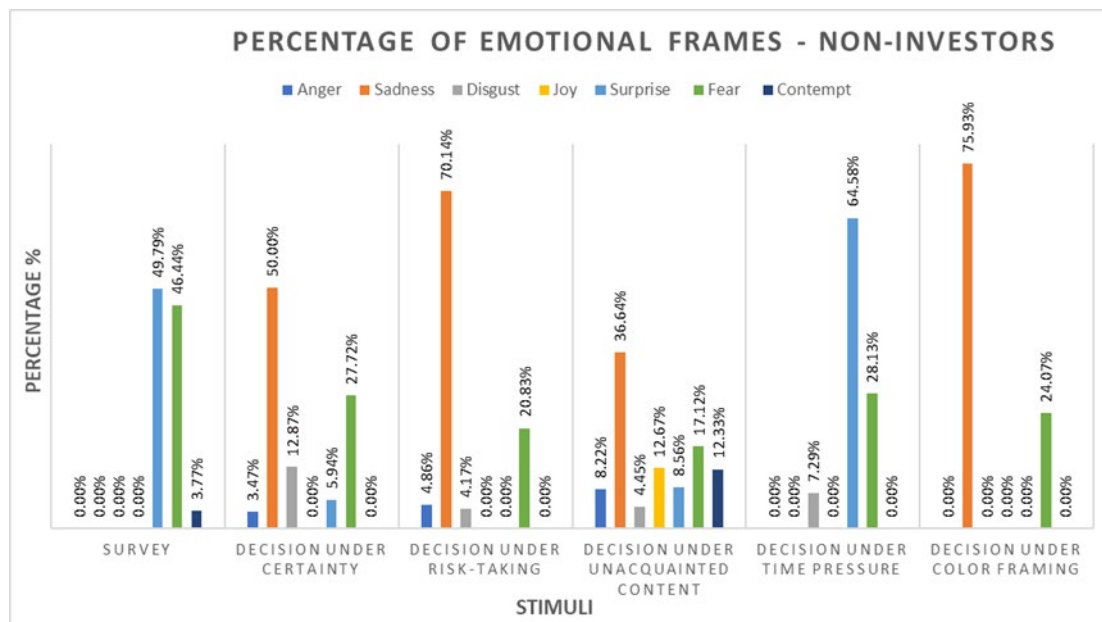


Figure 7: Percentage of Emotional Frames Detected from Non-Investors During the Experiment (≥ 30 ms)

3.5 Summary

In *phase I (Q1 and Q2)*, non-traders were captured with more significant peak exposures than the other group. The result coincided with Figure 7, that the non-trader group initiated relatively intense sadness in this phase. From a qualitative angle, non-traders demonstrated risk-seeking while facing poor choices (see Figure 3). The result suggests that high exposure to sadness could link to the risk-taking choice.

Phase II (Q3) was architected to monitor mainly non-traders responses due to their unfamiliarity with the trading activities. Moderate sadness (36.64%) was captured but accompanied by multiple emotional reactions, such as anger, joy, surprise, fear, and contempt. The outcome may imply when non-investors confront unfamiliarity, they tend to display mixed feelings. In the qualitative aspects, Table 3 illustrates the result obtained from this phase, revealing that the shared emotions of both groups are "surprise" and "sadness." Additionally, investors commonly demonstrated "joy," "disgust," "contempt," and "engagement," while "fear" and "anger" frequently arose in the opposite group.

Table 3: Emotions Obtained from Phase II – Investor V.S. Non-investors

	<i>(Overlapped Emotions)</i>					
INVESTORS	Surprise	Sadness	Joy	Disgust	Contempt	Engagement
NON-INVESTORS	Surprise	Sadness	Fear	Anger		

Phase III (Q4) obtained a minimal peak occurrence under GSR (see Tables 1 and 2). At the same time, a higher percentage of fear and surprise were exposed to investors and non-investors, respectively (see Figures 6 and 7). Based on the outcome, it can be concluded that both groups face time stress varied in emotional reactions.

Lastly, the results of *Phase IV (Q5)* become a focus of discussions in this research; it would be challenging to conclude why both groups displayed a significant growth of the exact emotion in *Phase II (Q3)* and *Phase IV (Q5)* with the manipulation of background coloring. Figure 8 represents the result of a positive correlation with the exact emotions of both groups.

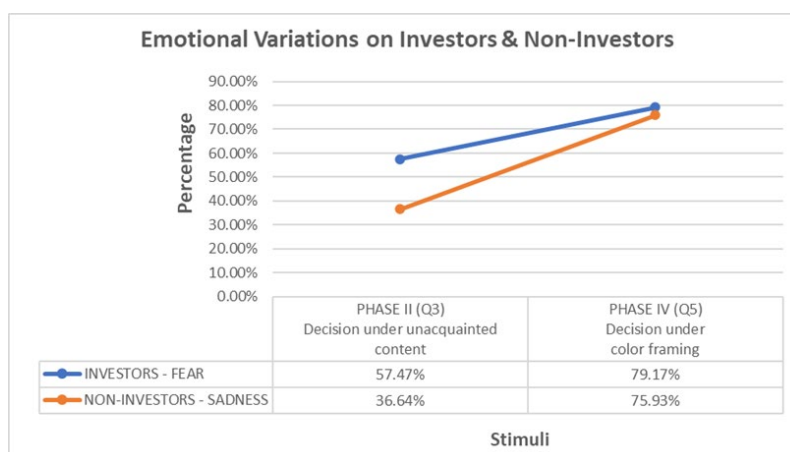


Figure 8: Emotional Variations on Phase II and IV between Investors & Non-Investors

4. Conclusion

This research suggests that human nature can be unpredictable with the complexity of emotions and decisions. However, it is achievable by segregating by groups or characteristics and then systematically reviewing their associated choices and responses to discover the factors. It is now possible to conclude that an active monitoring system can deepen our understanding of emotions from different angles and their potential impacts on decisions; meanwhile, the system also facilitates examining the deciding policy procedures. The study allowed us to disclose the variances between the groups and the complexity of human emotions.

5. Limitations and Future Research

The study has potential limitations, and it is recommended to increase the demographic populations with multiple regions, various races, a more significant sample size, a full range of emotions, and a long-term assessment of emotional effects. Besides, future research can consider expanding the experiment time to obtain sustainable responses from the GSR tool and with applications of a significant impact of anxiety to create a substantial difference in the experiment. Electroencephalogram (EEG) can further validate the decision-making process and cross-reference with the results from the AFFDEX in the qualitative perspective. The virtual experiment could also be considered; nonetheless, the current GSR would not be applicable. With artificial

intelligence technology evolving, we will hopefully overcome the present obstacles to achieve a more applicable virtual experiment environment to benefit researchers.

References

- Crowley, A.E. (1993) 'The Two-Dimensional Impact of Color on Shopping'. *Marketing Letters*, 4(1), pp. 59–69. Available at: <https://www.jstor.org/stable/40216286> (Accessed: April 4 2023).
- Ekman, P. and Cordaro, D. (2011) 'What Is Meant by Calling Emotions Basic'. *Emotion Review*, 3(4), pp. 364–370. DOI: 10.1177/1754073911410740.
- Gordon, C. and Arian, A. (2001) 'Threat and Decision Making'. *Journal of Conflict Resolution*, 45(2), pp. 196–215. DOI: 10.1177/0022002701045002003.
- Izard, C.E. (2013) *Human Emotions*. Springer Science & Business Media.
- Johnston, M. (1987) 'Human Beings'. *The Journal of Philosophy*, 84(2), pp. 59–83. DOI: 10.2307/2026626.
- Kahneman, D. (2011) *Thinking, Fast and Slow*. Farrar, Straus and Giroux.
- Kolb, B. and Whishaw, I.Q. (2014) *An Introduction to Brain and Behavior*. 4th ed. New York, NY: Worth Publishers.
- Lerner, J.S. et al. (2015) 'Emotion and Decision Making'. *Annual Review of Psychology*, 66(1), pp. 799–823. DOI: 10.1146/annurev-psych-010213-115043.
- Skinner, B.F. (1966) 'What Is the Experimental Analysis of Behavior?' *Journal of the Experimental Analysis of Behavior*, 9(3), pp. 213–218. DOI: 10.1901/jeab.1966.9-213.

Navigating Global Markets: The Strategic Role of Roadmaps in International Market Expansion

Urooba Jaami¹ and Abdul-Hadi Abulrub²

¹WMG, International Manufacturing Centre, University of Warwick, Coventry, UK

²School of Civil, Aerospace, and Mechanical Engineering, University of Bristol, UK

uroobajaami@gmail.com

hadi.abulrub@bristol.ac.uk

Abstract: The potential of adopting roadmaps to support internationalisation strategy is critical to organisations yet it has limited development. The process of introducing products into foreign markets poses considerable challenges due to the presence of numerous uncertainties and assumptions during market selection. Limited research has been conducted on the utilisation of roadmaps specifically for international markets. While scholars have explored roadmaps in various contexts and offered diverse methodologies for their implementation; there is a shortage of literature addressing the process of market expansion. Consequently, there exists limited guidance on the use of a visual, strategic, and collaborative tool to assist companies in developing an internationalisation strategy. A qualitative based interview approach was taken where seven interviews were conducted with industry professionals and experts in roadmapping. The aim was to gain experts' insight into the purpose and role of roadmaps during market expansion. The findings show that roadmaps serve varying roles during the process of market expansion but ultimately entail a strategic narrative. All the participants listed different benefits the roadmap had during their market expansion journey illustrating that the multifaceted role of a roadmap links to different elements of market expansion. Therefore, roadmaps should advance the current advice on market analysis and strategy. The paper offers a roadmap tool which is a non-prescriptive guide with prompts to aid in product launch and help with consistency against strategic goals to industry professionals.

Keywords: Roadmap, Internationalisation, Product launch, Market expansion, Strategy

1. Introduction

"Your product roadmap is the prototype for your strategy." (Lombardo, et al., 2017)

Companies often find that when they have saturated the domestic market, the next pragmatic business strategy is to enter foreign markets which also leads to a wider consumer base, and possibly higher profit margins (Kyläheiko, et al., 2011). The increasing need for companies to expand globally has resulted in it becoming a business imperative for medium-sized to large corporations, rather than a discretionary option (Gupta & Govindarajan, 2000). When a product is launched in a foreign market, the business environment is confronted with more customers and demands, and the future of the product goes beyond negotiating and involving just one or a few customers. To effectively communicate and engage with customers, stakeholders require information about future product development. (Lethola, et al., 2005). Moreover, engagement across multi-disciplinary teams also grows because the launch of a product rarely comes from one business area. Marketing, product development, legal, finance and sales all play a collaborative role in this process (Groenveld, 2016).

Roadmaps have been deployed for the purpose of presenting product evolution through the lens of market opportunities whilst simultaneously evaluating new ideas to align product development with company goals (Phaal, et al., 2022). One of the objectives of using a roadmap is to identify ways to address market penetration through communicating an overall strategic direction and aligning cross-functional groups around an integrated plan (Kappel, 2001; Phaal, et al., 2001). But what tools are there to aid in the process of internationalisation, and more specifically in the entry into foreign markets? This body of work presents companies that experience international market expansion with a roadmap structure to guide their internationalisation process.

1.1 Market Expansion and Selection

When companies choose to extend their operations into global markets, a key consideration they confront is the selection of an appropriate target country (Rana & Sharma, 2015). Macroeconomic variables have traditionally been rooted in analysis of models when choosing an international market. Macroeconomic aspects encompass economic, political, cultural, technological, and geographical considerations. This mainly includes market size, market growth, economic development, infrastructure, tariffs, and taxes among other legal aspects of the desired market (Zschocke, et al., 2013; Miečinskienė, et al., 2014; Szymczyk, 2020). In addition, an analysis of the degree of political power that indicates the nature of political stability in terms of current and future state is also relevant. (Robertson & Wood, 2001). Cultural nuances are also emphasised in the literature, particularly

when gauging the strengths and weaknesses of consumer behaviour in a potential foreign market (Budeva & Mullen, 2014).

Microeconomic factors linked to company characteristics also play a role in international market selection. Researchers like Isa, et al., (2014) emphasise specific factors such as project type, firm experience, potential benefits, market size, financial and technological capabilities, and resource availability.

Ozturk, et al., (2015) studied the international market selection literature, reviewing many models and performed a comparison among them. Their aim was to identify and consolidate the criteria used in these models. The criteria fell into six main categories:

1. Demographics: This includes factors related to population, age, gender, income distribution, market size, infrastructure, distance, similarity, and human resources.
2. Politics: This pertains to factors related to political stability, country risk, and corruption.
3. Economy: Here, the focus is on economic stability, growth, market intensity, consumption, freedom, potential, agreements, barriers, incentives, taxes, and financial risks.
4. Culture: This considers, cultural, psychic, and language differences, education, and literacy between markets.
5. Product Factors: This involves, factors directly related to the product or service being offered, including the competitive landscape, customer response, demand, and consumer values.
6. Company Factors: Here, the focus shifts to factors to the company itself, such as strategic orientation, the networks, barriers, growth motivations, and reputation.

1.2 The Visual Nature of Roadmaps

Kerr & Phaal (2022) rightly note that roadmaps are inherently visual in nature which makes them appealing. They define roadmaps as “a structured visual chronology of strategic intent”. The cojoining of roadmapping and roadmaps suggest the link between a process (mapping) to the output (roadmap). They aid coordination in complex and dynamic markets (Kostoff & Schaller, 2001). However, according to Münch et al., (2019) companies operating within highly dynamic markets are facing increasing difficulties in effectively strategising product development and creating roadmaps that can be relied upon. They suggest that diverse roadmap approaches need to be designed to enable consistent consideration of both short-term and long-term perspectives.

Phaal, et al., (2022) recognises that roadmaps can take various forms and states that all roadmaps should answer the same set of ‘why-what-how-when’ questions about products, technologies, and markets. Therefore, roadmaps serve as a tool for visualising the future, with their form and execution tailored to the specific needs of the company (Phaal, et al., 2008). Within literature, a common and widely acknowledged framework is the schematic multi-layered roadmap. Adapted by Kerr & Phaal (2022) since, it centres on the ‘why-what-how-when’ questions (Figure 1).

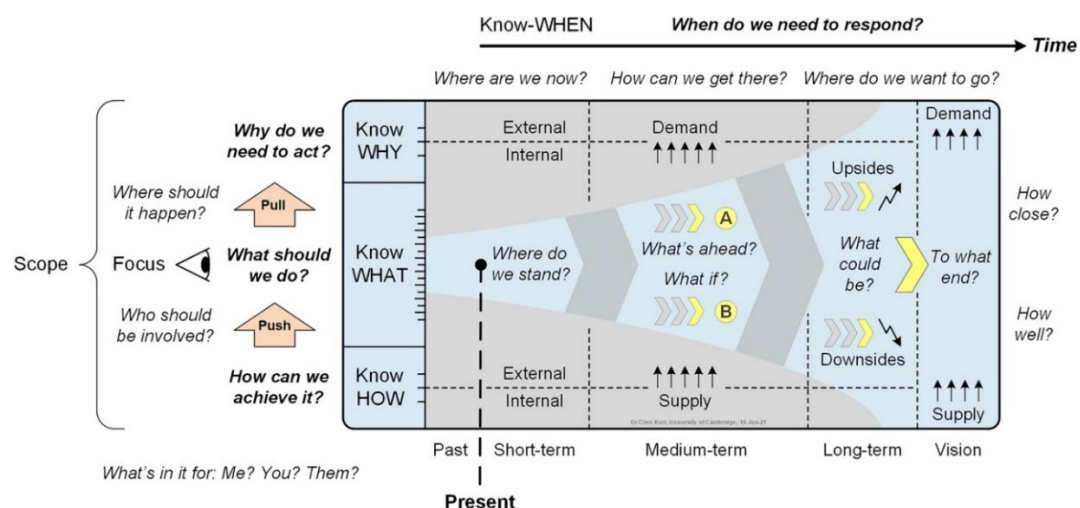


Figure 1: Roadmap governing framework (Kerr & Phaal, 2022)

The new framework consists of a multi-layered time-based chart that combines multiple perspectives into a single visual diagram. A systems thinking approach has been applied to the adapted multi-layered structure. The framework has been assigned “know-why,” “know-what,” and “know-how” to the layers, while “know-when” is

associated with the horizontal time axis. Kerr & Phaal (2022) placed questions like "Where do we want to go?" "Where are we now?" and "How can we get there?" along the timeline. Additionally, they extended this concept to include questions for the spatial dimension: "Why do we need to act?" "What should we do?" and "How should we do it?" These fundamental questions formed the basis of a generic framework that can be overlaid with any strategic narrative or plan.

2. Research Methodology

This paper is based on research that obtains qualitative data collection. Here, the researcher chose to use an interview-based approach because interviews are regarded as particularly effective for analysing experiences and perceptions (Merriam, 1998). Interview questions were created in the form of a funnel, starting with questions about the approach to roadmaps and market expansion, and ending with questions on role and utilisation. The questions asked were centred around the following themes:

- The factors companies consider when roadmapping.
- The approaches used to roadmap when providing a short and long-term view of the product future.
- The role roadmap has (if any) when launching products internationally.

Question themes were chosen based on areas of interest found in both critical theory and empirical research on roadmaps (Fincham, 2008).

The authors utilised a purposeful direct approach to gauge the experts' beliefs regarding the criticism of roadmaps, specifically around their perceived lack of value. This approach provided respondents the opportunity to truthfully express their genuine thoughts on the role of roadmaps. Moreover, certain questions adopted an indirect approach to mitigate potential biases that could influence respondents' answers (Coughlan, et al., 2009).

The research interviewed seven experts with knowledge in building roadmaps and internationally launching products. Following is the list of participants and the industry they work in:

- P1: Executive Marketing Manager- Technology (Music services)
- P2: Senior Quality Director- Aviation
- P3: Product Manager- Online sports retailer
- P4: CO-Founder and CTO- Augmented reality software
- P5: Senior Product Manager- Real estate software
- P6: Head of Product- Fintech
- P7: Director of Research- Academia and technology management

The data from the interviews was analysed and developed into themes by identifying, analysing, and interpreting patterns within the dataset. The analytical process adhered to the six-phase framework for thematic analysis outlined by Braun and Clarke (2006).

3. Results

3.1 Theme 1: Market Size and Competitor Analysis is the Main Driver for Market Expansion

All industry interviewees had experience in launching a product internationally. The products ranged from tangible physical products like cycles to intangible products such as software platforms and a mobile application. Participants were asked the motivations and reasons for expanding where **market size** and **opportunity** occurred as the most common driver. Four out of the six industry participants mentioned that a large market size is indicative of greater opportunities because it expands the product range to new customers who are willing to use it resulting in more market share.

"We chose to expand to the U.S because of the size of the market which gives a lot of revenue opportunity. The analysis showed that the market is large and concentrated enough to sell the product at a price we need to sustain our growth aspirations. Part of my job is to look for active ways to grow and accelerate our business so once I established that there was not a monopoly in the U.S market through the analysis, it was a no-brainer to take our product there." – P3

"We had investment markets that were part of our long-term growth strategy. The ones we focused on first were based on the market size and how much revenue it could generate." – P5

"It is essential to get a good idea of the what the market size is like because it exposes the opportunities that can be availed" – P1

3.2 Theme 2: The Purpose of the Roadmap is That it Serves as a Strategy

All interviewees had been involved in building a roadmap and all mentioned the word “strategy” when asked about the purpose of the roadmap. For P5 the product roadmap captures how the strategy transforms into a reality which can serve as inspiration, motivation and shared ownership of the product and its success.

“The roadmap should inspire and motivate the team because it actualises the strategy, it shows you what’s ahead and makes things seem more realistic because its visual and people find visuals exciting.”

– P5

According to P4 who is a CEO of a start-up, the roadmap was pivotal in meetings with investors because they need to see a strategy documented to buy-into the product. In this manner, the product roadmap is created as a result of strategic planning that conveys the vision and goals of the product. To do this successfully, P4 states that the roadmap should not be hardwired because this makes it difficult to follow. For instance, having over 10 items on it allows for complexity to contaminate the roadmap, which then makes it dysfunctional and less strategic.

“The roadmap is indicative of how to build defensibility and differentiation in business. It is not a project plan; it is a strategy and I’m quite conscious of conveying that to teams.” – P4

P3 echoed this stating that a strategic conversation is more enriching and productive when gravitating to the roadmap. At the heart of this gravitation should be the strategic message that is visualised through the roadmap but making it flexible is key because without that it is hard to encourage communication around the strategic goal. *“Strategic conversations are more productive when you’ve got your roadmap at hand.”* – P3

P7, a subject matter expert on roadmapping also talked about strategy when describing roadmaps. They said that roadmap gives the strategy a structure through a narrative. *“The roadmap is the structure that give the strategy a narrative. In strategy, you must bring a lot of things together and roadmapping is a very powerful tool for integration and communication.”* – P7

3.3 Theme 3: The Roadmap is a Multi-Faceted Beneficial Tool That was Used in the Internationalisation Process

3.3.1 Navigational tool (P1, P2)

“That go-live date becomes the focus of everyone’s work and teams become mired in routine activities as a result, but having a roadmap helps navigate through different parts within the context of a large project.” – P1

Here, the roadmap is used for navigational purposes. P1 stated that in the midst of getting the product ready, there are multiple teams involved all working towards that ‘go-live’ date. As a result, teams are engrossed in the day-to-day tasks and having a roadmap helps keeps focus because the roadmap connects different aspects of the product in a logical way.

3.3.2 Engagement with key stakeholders (P6, P5, P1)

“From project planning right through to launch, the roadmap was used to get buy-in from stakeholders.” – P6

“It disseminates the information required to bring stakeholders together.” – P5

“The roadmap provided a clear strategy which kept stakeholders engaged.” – P1

For P6, the roadmap was pivotal tool in engaging with key stakeholders regarding the actual content and substance of the product through internationalisation process. The roadmap depicted key milestones such as the API integration with the one of the main payment providers. This milestone was not set against a specific date but was displayed against Q2 of the following year. According to P6, it was important not to have specific dates because deadlines can be too prescriptive, and the roadmap illustrated direction not delivery. Therefore, having high-level ‘big win’ items that were a source of excitement for stakeholders was important to portray as it can gain critical buy-in and support. Further, it gave senior management the confidence that development work was taking place to achieve this, matching development efforts to broader product goals.

3.3.3 Product Vision & Ethos (P3, P4)

"The vision work was critical to the success of our internationalisation venture and the roadmap was at the heart of communicating that." – P4

P4, the CEO of an augmented reality start-up, shared their journey of expanding to Japan stating that the first essential step was to start off with a product vision. In creating a vision, the basis of the roadmap was formed because it outlined the destination they planned to reach. P4 also mentioned that the vision played a pivotal role not just at the start of the internationalisation process but at key points of decision making because the vision made it straightforward for the team to tie every decision and priority to the product ethos- "a fully immersive online shopping experience via the web". P4 felt that most organisations do have a product vision but often it isn't communicated enough, and an effective way to do this is to have it on a roadmap. This is because various teams visit the roadmap multiple times.

3.3.4 Strategy planning (P1, P5, P7)

"Roadmapping is a technique that fosters strategic planning and forecasting." – P7

"The roadmap gave us a good view of what was ahead especially in the beginning, when resources management was vital. It gives a good indication of how much work there is so you can manage resources accordingly." – P5

"The roadmap highlights strategic initiatives and actions that help drive the process." – P1

Three of the interviewees said that the roadmap's visual representation of a clear line of sight toward how and why the product was advancing helped them with strategic planning. It concentrates in particular on the technical know-how and resourcefulness of the development team. The roadmap was developed for P5 based on the resources that were available and stakeholder expectations, which aids in the strategic alignment of corporate objectives for planning. P1 claimed that for them, the plan communicated crucial elements like resource management, or how many resources are needed, whether there are enough of them, and whether more need to be hired. Because it roots important questions like where we want to go, and how can we get there? The roadmap is an early visual attempt to establish strategic planning.

4. Discussion

4.1 Interconnectedness of Growth, Market Alignment and Market Selection Strategy Through a Roadmap

In pursuit of market expansion, achieving growth emerges as the central objective. A key factor in driving this growth is the alignment of the organisation with market trends (Kappel, 2001). This alignment ensures that strategic planning and execution remain in sync with the evolving needs and requirements of the target audience. By validating the roadmap items against these key market trends, companies' can effectively tweak their expansion strategies to meet customer demands.

The symbiotic relationship between growth and market alignment becomes more evident when considering the process of market selection. Questions on the roadmap such "where we are we now?" try to examine resources, capabilities, etc. In line with this, the fundamental concerns of "where do we want to be" and "how can we get there?" consider factors including governmental policies, regulations, "economic attractiveness", cultural barriers and market potential. This aligns with the macroeconomic factors outlined in the literature, such as market size, growth potential, and economic development (Miečinskienė, et al., 2014; Zschocke, et al., 2013; Szymczyk, 2020).

As Kerr & Phaal's (2022) navigational framework aptly sets the 'why; what; how; when; who; and where,' it inherently recognises that the 'where' of market selection is intricately intertwined with the 'why' of growth. A case in point would be a company's aspiration to introduce its product in the United States by 2025. This ambition requires a meticulous evaluation of factors such as political stability, market size, economic health, and cultural norms – all of which align with the overarching growth goal. Therefore, the roadmap concept not only serves as a navigational tool but also bridges the gap between strategic growth aspirations and the pragmatic execution of market expansion. By weaving together, the threads of growth, market alignment, and market selection, it provides a coherent framework through which companies can channel their efforts towards sustainable internationalisation.

Interviewees highlighted how roadmaps are more than mere timelines; they encapsulate the strategic direction, vision, and goals of products. Roadmaps crystallise the product's purpose, enabling teams to consistently tie

decisions to the core values of the product. This is especially valuable in international expansion, where the product's value proposition must resonate across different markets. The visual depiction of the path forward on a roadmap aid in managing resources, aligning initiatives with corporate objectives, and forecasting the journey's intricacies. This aligns with the concept of roadmaps as structured visual chronologies of strategic intent (Kerr & Phaal, 2022). The roadmap becomes the bridge connecting overarching strategic goals to the tactical steps required for successful entry into new markets.

5. Market Expansion Roadmap Toolkit

Roadmaps are strategic tools which gives a description about the company's future directions and enables clear understanding of the future. Experts in roadmapping acknowledged that an internationalisation angle had not been taken before. In light of this, the authors have devised a tool that will help companies in market expansion. The authors present the tool in Figure 2, where self-facilitation is guided by a visual of series of sequential process steps:

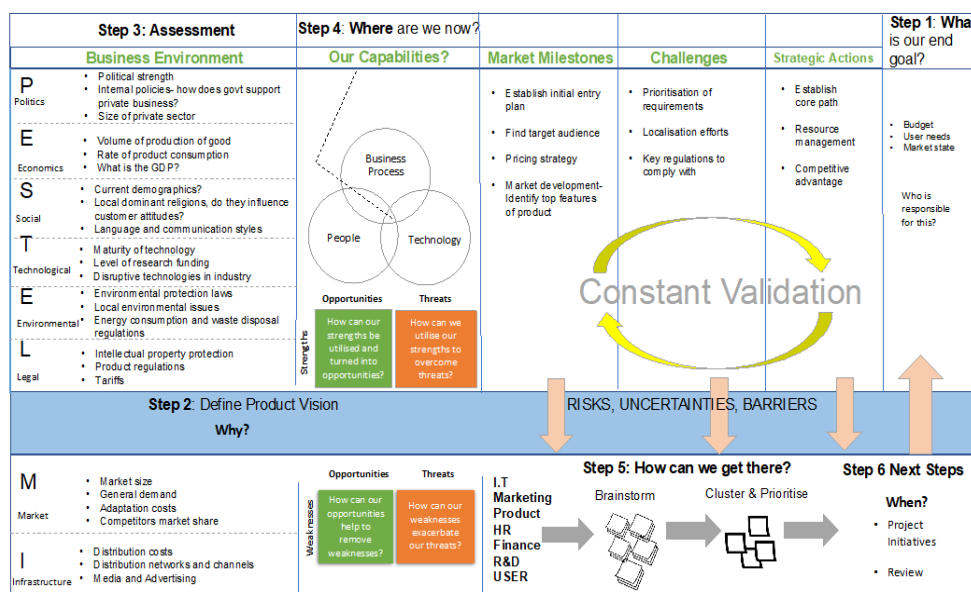


Figure 2: Roadmap market expansion tool

5.1 Step 1: Define the End Goal (What?)

The tool guides the company to start by defining its long-term end goal. The company should factor the budget, customer needs and the state of the market. In doing so, this helps understand the overall mission which in turn guides focus and helps shape strategy.

"The roadmap is the structure that give the strategy a narrative."- P7

5.2 Step 2: Craft the Vision (Why?)

This step asks the company to define their product vision. This vision should align seamlessly with the established goal, providing a sense of purpose and direction. Results illustrate that key decisions and priorities can be tied back to a clear vision. For this, the authors place the vision at the focal point of the roadmap to be consistent and focused throughout the process. It is the blueprint that outlines a product's core concept and features, giving guidance to different teams on what the product should look like and how it should perform in different scenarios.

"The vision work was critical to the success of our internationalisation venture and the roadmap was at the heart of communicating that." – P4

5.3 Step 3: Rigorous Market Assessment (Assessment)

This is where a thorough assessment of the desired market should be carried out by assessing macroeconomic dimensions of market selection. The bullet points against each consideration are the specific variable to assess. The points here are serving as guidance and not intended to be prescriptive.

“It is essential to get a good idea of the what the market size is like because it exposes the opportunities that can be availed” – P1

5.4 Step 4: Analyse the Current Position (Where?)

Here, the company establishes the current state. This will help identify gaps in microeconomic aspects such as existing processes, technology, and resources. In achieving adequate market share, the authors encourage to look at competitors to uncover new opportunities and value business specific competencies. Forming an accurate view of **where** the skills and value lie will help make decisions about what can be done. Making a relationship between the internal (strengths and weaknesses) to the external (opportunities and threats) can help create better strategic options.

“We had investment markets that were part of our long-term growth strategy. The ones we focused on first were based on the market size and how much revenue it could generate.” – P5

5.5 Step 5: Collaborative Strategy Building (How?)

In this step, inputs from various perspectives are gathered to brainstorm, cluster and prioritise on the product offering and customer journey. Some departments have been listed here as examples. The approach is flexible, inputs can be gathered from workshops or then individual meetings. Note, the market milestones, challenges and strategic actions are feeding into the conversation with the teams. Market expansion involves knowledge pooled in from various teams and brainstorming encourages open collaboration providing multiple diverse perspectives to use. Challenges associated to market expansion have been listed to help initiate discussions. This can define the problem clearer and help identify solutions quicker. Again, the bullet points are guiding prompts and not dictatorial.

“It disseminates the information required to bring stakeholders together.” - P5

5.6 Step 6: Envisioning the Next Steps (When?)

The final step wraps up the roadmapping the process. It involves thinking about the next steps in terms of project initiatives, project deliverables and reviewing the learnings of roadmapping. Note, the roadmap can be referred to at any point after this step to stay on track against the vision, to measure success against the end goal, and to update as market conditions and user needs as they change. This gives a chance to initiate formal planning based on the key takeaways, the learning experiences, and the knowledge acquired.

6. Conclusion and Future Research

The results indicate the dynamic and multifaceted nature of roadmaps, positioning them as essential instruments for companies seeking successful entry into global markets. Companies wishing to expand in international markets need to consider the market size by looking at the demand and competitors market share. Market analysis applies a technique that seeks out the facts of market and marketing phenomena to reveal what customers really want. This is achieved through obtaining information, analysing data, and communicating results.

The role roadmaps play in internationalisation is pivotal as it serves as strategic tools that integrate macroeconomic and microeconomic considerations, facilitate stakeholder engagement, aid in resource allocation, and provide a structured approach to executing product visions.

The authors research synthesised the *tool* of roadmapping to support the *process* of international market entry. This paper has produced a roadmap structure to align features of roadmapping with the areas of market expansion. A tool is provided to capture the main facets of market expansion. It serves as a practical guide for navigating this process without the need for workshops, making the tool a flexible and adaptable approach for entering international markets. The tool can be customised to suit the strategic context of any business. The tool encourages companies to consider essential aspects of market expansion. This enables key challenges to be identified earlier in the process, allowing for strategic actions to be highlighted and undertaken, if and when required.

6.1 Research Limitations

The project has some limitations that should be noted. Firstly, the findings and analysis are based on only seven interviews. Each participant represented a different type of product with different roadmapping process and thus comparisons made within a small sample size limits the explanatory power of the analysis. Secondly, the insights from different industries leads to a more generalised evaluation as opposed to an in-depth one.

6.2 Opportunities for Future Research

To acquire a deeper understanding of the role roadmaps play in international markets, future research should test the tool iteratively as a pilot with a small number of participants from relevant departments instead of implementing it across the entire organisation. Iterative testing will test the individual steps incrementally rather than all at once. This can enable modifications to be made gradually in response to feedback. Future research should consider any project initiatives that are part of an internationalisation strategy to verify the entire tool. This can be accomplished by extensive action research conducted in businesses over a few years to ensure the successful integration of the tool.

References

- Braun, V. & Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, Volume 3, pp. 77-101.
- Budeva, D. G. & Mullen, M. R., 2014. International market segmentation: Economics, national culture and time. *European Journal of Marketing*, 48(7-8), pp. 1209-1238.
- Coughlan, M., Frances, R. & Patricia, C., 2009. Interviewing in qualitative research. *International Journal of Therapy and Rehabilitation*, 16(6), pp. 309-314.
- Fincham, J. E., 2008. Response rates and responsiveness for surveys, standards, and the Journal. *American Journal of Pharmaceutical Education*, 72(2), p. 43.
- Groenveld, P., 2016. Roadmapping Integrates Business and Technology. *Research-Technology Management*, 40(4), pp. 48-55.
- Gupta, A. K. & Govindarajan, V., 2000. Managing Global Expansion: A Conceptual Framework. *Business Horizons*, 43(2), pp. 45-45.
- Isa, C. M. M., Saman, H. M. & Nasir, S. R. M., 2014. Specific-factors Influencing Market Selection Decision by Malaysian Construction Firms into International Market. *Procedia - Social and Behavioral Sciences*, Volume 129, pp. 4-10.
- Kappel, T. A., 2001. Perspectives on roadmaps: how organizations talk about the future. *The Journal of Product Innovation Management*, Issue 18, pp. 39-50.
- Kerr, C. & Phaal, R., 2022. Roadmapping and Roadmaps: Definition and Underpinning Concepts. *IEEE Transactions on Engineering Management*, 68(1).
- Kostoff, R. N. & Schaller, R. R., 2001. Science and Technology Roadmaps. *IEEE Transactions on Engineering Management*, 48(2), pp. 132-143.
- Kyläheiko, K. et al., 2011. Innovation and Internationalization as growth strategies: The role of technological capabilities and appropriability. *International Business Review*, 20(5), pp. 508-520.
- Lethola, L., Kauppinen, M. & Kujala, S., 2005. *Linking the business view to requirements engineering: long-term product planning by roadmapping*. Paris, France, 13th IEEE International Conference on Requirements Engineering .
- Lombardo, T., McCarthy, B., Ryan, E. & Connors, M., 2017. *Product Roadmaps Relaunch: How to Set Direction while Embracing Uncertainty*. s.l.:O'Reilly Media.
- Münch, J., Trieflinger, S. & Lang, D., 2019. *Product Roadmap- From Vision to Reality: A Systematic Literature Review*. Valbonne Sophia-Antipolis, France, IEEE .
- Merriam, B. S., 1998. *Qualitative research and case study applications in education*. 2nd ed. San Francisco: Jossey-Bass Publishers.
- Miečinskienė, A., Stasytytė, V. & Kazlauskaitė, J., 2014. Reasoning of Export Market Selection. *Procedia - Social and Behavioral Sciences*, Volume 110, pp. 116-1175.
- Ozturk, A., Joiner, E. & Cavusgil, S. T., 2015. Delineating Foreign Market Potential: A Tool for International Market Selection. *Thunderbird International Business Review*, 57(2), pp. 119-141.
- Phaal, R., Farrukh, C. J. & Probert, D. R., 2001. *Characterisation of Technology Roadmaps: Purpose and Format*. s.l., Portland International Conference on Management of Engineering and Technology .
- Phaal, R., Simonse, L. & Den Oden, E., 2022. Next generation roadmapping for innovation planning. *International Journal of Technology Intelligence and Planning*, 4(2), pp. 135-152.
- Phaal, R., Simonse, L. & Ouden, E. D., 2008. Next generation roadmapping for innovation planning. *International Journal of Technology Intelligence and Planning*, 4(2), pp. 135-152.
- Rana, S. & Sharma, S. K., 2015. A Literature Review, Classification, and Simple Meta-Analysis on the Conceptual Domain of International Marketing: 1990–2012. In: *Entrepreneurship in International Marketing*. s.l.:Emerald Publishing Limited, pp. 189-222.
- Robertson, K. R. & Wood, V. R., 2001. The relative importance of types of information in the foreign market selection process. *International Business Review*, 10(3), pp. 363-379.
- Szymczyk, K., 2020. INTERNATIONAL MARKET EXPANSION BY THE POLISH FOOD INDUSTRY: REASONS, STRATEGIC GOALS AND METHODS. *International Journal for Quality Research*, 14(4), pp. 1207-1222.
- Zschocke, M. S., Martin, B. & Jewkes, E., 2013. Competitive Market Selection With Timing and Capacity Decisions. *IEEE Transactions on Engineering Management*, 60(1), pp. 88-98.

Governance in Family Firms: How to Ensure Continuity

Shital Jayantilal¹, Sílvia Jorge² and Paulo Alcarva¹

¹Universidade Portucalense, REMIT, Porto, Portugal

²GOVCOPP, DEGEIT, Universidade de Aveiro, Portugal

shital@upt.pt (Corresponding author)

sjorge@ua.pt

palcarva@upt.pt

Abstract: Family firms play a key role in the world economy, yet their success is often plagued by family-related issues and conflict. Succession is one of the most critical hurdles they face. The purpose of this paper is to illustrate how specific governance instruments, such as the family protocol, can aid mitigate the conflicts by establishing a set of guidelines and procedures to aid govern the operation, management and continuity of family firms. To study the underlying strategic decision making process of the multiple stakeholders involved, this paper resorts to game theory. The results will provide valuable determinants of the family protocol which may aid smooth managerial transfer in the family firm and uphold harmony in the family setting.

Keywords: Conflict, Family firm, Succession, Game theory, Corporate governance

1. Introduction

Families own and manage the majority of businesses worldwide. Seventy-five percent of entrepreneurs and 81% of established business owners co-own and/or co-manage their businesses with family members (Kelley et al., 2020). They range from sole proprietors to large international enterprises. Family businesses play a crucial role in the economy, providing employment opportunities and generating wealth.

However, family firms face unique challenges that can impact their longevity and success. One such challenge is the management of family dynamics, conflicts and succession planning. This is where governance can be critical.

Family firms are unique in that they are owned and operated by members of the same family, often spanning multiple generations. While the family connection provides many benefits, it also poses challenges, especially when it comes to succession. Succession is a critical stage in the life cycle of a family firm, as it involves the transfer of ownership and control from one generation to the next. The success of this transfer is crucial for the long-term stability and success of the family firm.

Indeed, most family businesses have a very short life span beyond their founder's stage and some 95 percent of family businesses do not survive the third generation of ownership (Abouzaid, 2018).

Governance and family protocol are crucial elements for the success and sustainability of family firms. Family businesses are unique in their structure and operation, often combining family and business interests, which can lead to conflicts and challenges. To overcome these challenges, it is important to have clear and well-defined governance and family protocol in place.

Family governance mechanisms serve to govern and strengthen relations between the family and the business, as well as the relationships between the members of the business family itself. However, despite agreement on the importance of adopting family governance structures, explicit research on the determinants of family governance mechanisms is currently missing.

Family protocol is a set of rules and guidelines that outline the roles, responsibilities, and expectations of family members within the business. A strong family protocol promotes family unity and helps prevent misunderstandings and disputes among family members. It also helps establish clear lines of succession and leadership, ensuring a smooth transition of ownership and control from one generation to the next.

Their paper examines the effectiveness of specific governance instruments, particularly the family protocol, in mitigating conflicts by establishing a set of guidelines and procedures to govern the operation, management, and continuity of family firms. By employing game theory, this study investigates the underlying strategic decision-making process of the multiple stakeholders involved. Our results provide valuable insights into the determinants of the family protocol, facilitating a smooth transfer of managerial responsibilities within family firms and promoting harmony in the family setting.

This paper begins with a comprehensive literature review on the Family Protocol and its application in family firms. The review also explores the utilization of game theory as a framework for studying the strategic decision-

making process of multiple stakeholders. Subsequently, we present our proposed model, which integrates the Family Protocol and game theory to analyze its effectiveness in mitigating conflicts and facilitating smooth managerial transfer within family firms. Following the model, we present the results obtained from our analysis. Finally, we conclude by discussing the implications of our findings and their significance for enhancing operational and relational dynamics within family firms.

2. Family Firm Governance - The Family Protocol

Several conceptual models have already been developed with regard to the family firms, all of which attempt to highlight their particular characteristics. One of the most widespread is Davis & Tagiuri (1982) three-circle model. This model presents three interconnected subsystems (business, family and ownership) and four areas of intersection that illustrate the various roles that members of these organisations can play simultaneously.

Agency theory suggests that family firms either mitigate or exacerbate agency problems. Agency costs consist of the combination of costs incurred by a firm in terms of lower performance through its unwillingness or inability to effectively deal with agency problems, and of costs incurred through the incentives and monitoring activities used to deal with information asymmetries and align the interests or actions of an agent with the interests of a principal (Jensen & Meckling, 1976).

Proponents of the mitigation argument assert that family firms are one of the most efficient forms of organisational governance (Dyer, 2006; Dalton & Daily, 1992) because they incur in fewer agency costs (Jensen & Meckling, 1976) considering that the principal (owner) and the agent (manager) are usually one and the same, therefore, mitigating the information asymmetry and aligning managers' and owners' goals (Fama & Jensen, 1983).

Nonetheless, Morck, Shleifer & Vishny (1988) identified the potential for agency costs in family firms. Altruism is an agency problem which may occur in family firms (Moore, 2009). Schulze, Lubatkin, Dino and Buchholtz (2001) introduced the problems of altruism and self-control in the context of family business. Altruism makes it difficult for families to effectively monitor other family members who work for the firm. Parental altruism may lead family owners to have blind faith in their employed children (Lubatkin, Schulze, Ling & Dino, 2005; Lubatkin, Durang & Ling, 2007).

Adverse selection and entrenchment may lead to placing family members in positions they are not adequately qualified for (Burkart, Panunzi & Shleifer, 2003). In family firms, resulting from the mix of personal and professional relationships, decision making process tend to be more emotional rather than rational driven, when compared to non-family (Gómez-Mejía et al., 2001).

Family businesses are seen as being "fertile ground for nepotism, self-dealing, entrenched management, and utility maximization by the family to the detriment of corporate profits and other shareholders" (Poza, Hanlon & Kishida, 2004, p.99).

Under the conditions of asymmetric information and in the absence of complete contracts, two main kinds of agency problem may arise (Chrisman, Chua, & Litz, 2004). The first is adverse selection, which occurs when the principal enters into a contract with an agent who is not well qualified or is in some other way unsuitable for the tasks to be performed. The second is moral hazard, a term that "suggests that people cannot be counted on to do what they say they are going to do, and that failure manifests itself in prices and contractual arrangements" (Alchian & Woodward, 1988, p. 68).

According to Gersick et al. (1999), family businesses can enhance their chances of survival by implementing appropriate governance structures. Establishing such structures fosters trust among family members, promotes unity, and improves the business's chances of viability.

The corporate governance approach, which suggests a set of institutions and procedures targeted at regulating and decreasing agency costs and block holder conflicts, is the prevalent reasoning in the mainstream literature (Carney et al., 2014; Zellweger & Kammerlander, 2015). The term "family protocol" was first used by Ward & Gallo (1992) to refer to a written statement of the family rules that govern interactions between family members and those who hold ownership and managerial positions in a family business; and captures the core rules and regulations of the family business and will often consist of the family business's purpose or values, key policies, ground rules, and conflict resolution guidelines (Leach & Bogod, 1999; Poza, 2010; Berent-Braun & Uhlaner, 2012).

A family firm protocol is a set of guidelines, rules, and procedures that are used to govern the operation and management of a family firm. The protocol is designed to ensure that the interests of all stakeholders, including family members, employees, and shareholders, are aligned and that the family firm operates in a stable and efficient manner. Family protocols are highly heterogeneous. The form and content will differ from one family business to another depending on the size of the family, its stage of development, and the degree of involvement of family members in the business. However, they must address some of the following issues (Aronoff et al., 1998; Neubauer & Lank, 1998; Gallo & Kenyon-Rouvinez, 2005; Montemerlo & Ward, 2005): statement of the principles that outline the family commitment to core values, vision, and mission of the business; definition of the roles, compositions, and powers of key governance bodies of the business (family members/shareholders, management, and board of directors). In addition, the family constitution defines the relationships among the governance bodies and how family members can meaningfully participate in the governance of their business.

Even if it is not possible to eliminate the conflict which arise in family firms these organisations need to deal with them in order to minimise their negative consequences (Arteaga & Uman, 2020). And, the family protocol, as a governance policy tool, can help ameliorate intra-family conflict and enhance the probabilities of survivability of the family business. Conflict resolution in family businesses is addressed by dealing with specific instruments such as corporate bylaws, corporate compliance and family protocol (Comelles, 2020). The lack of communication in companies and the difficulty to maintain relationships between the business and the family generate both internal and external conflicts. Some of those conflicts, as is the case with generational succession, are related to the lack of organizational structure (Bernal, 2021) and employing a family protocol can ease those conflicts and support the firm's continuity.

3. Family Firm Governance and Game Theory

Game theory is a mathematical framework that can be used to study and analyse decision-making in strategic situations. One of the key applications of game theory in the study of family firms is the analysis of the interaction between family members. This information can be used to design a family protocol that balances the interests of all family members and promotes cooperation.

One of the most difficult problems that family businesses encounter, the succession process, has been examined rigorously and objectively using the mathematical underpinnings of game theory. Due to its ability to strategic decision making and the elements that influence it, game theory has been shown to be a compelling option for better understanding family firm executive succession (Blumentritt et al, 2012; Jayantilal et al., 2016a,b; Jayantilal et al., 2020 and Jayantilal et al., 2022).

Corporate governance entails creating a variety of methods to reduce agency issues by offering rewards for achieving an effective organizational framework and performance in organizations (Samuelson & Marks, 2015; Hurwicz & Reiter, 2006). In light of this, Arifa & Islam (2020) have no doubt that governance is one aspect of corporate organisation that can be thought as a mechanism design (design a game) challenge where the ideas, techniques, and tenets of game theory and mechanism design can be used to create efficient corporate governance.

There are already many studies that apply game theory to various aspects of corporate governance. Wong's (1989) seminal paper explores the question of equity in the allocation of voting rights among corporation shareholders. But other constructs have been the subject of study: the effect of share repurchase on listed companies, which will diversify the capital structure and the structure of corporate governance will be improved (Peng & Tian, 2008); social relations network of the corporate governance from the perspective of social capital mutual trust and harmonious cooperation (Li, 2011); corporate governance based on control mechanism (Li et al., 2006); the function of independent directors with different payoff rules (Wang, 2013); the actual voting power of employees on boards and its effect on firm performance (Balsmeier et al., 2013); construct the optimal corporate board structure model (Zhao et al., 2011); measure voting power/ownership concentration (Crespi & Renneboog, 2010).

However, if the game theory is still in its infancy with regard to the family businesses succession process, in terms of a governance structure, and protocol design in specific, it is essentially unborn. We propose the use of Game theory to aid address the issue of imperfect and asymmetric information using principal-agency theory (PAT), more precisely, through adverse selection models' analysis, focusing on the Protocol contracts and their incentives.

4. Methodology

Game theory delves into the realm of strategic decision-making, formally describing strategic situations through games. These games are defined by the involved players, their information sets, the feasible actions at their disposal, and their individual preferences and payoffs. The players in a game represent various agents such as individuals, groups, or firms, who are responsible for making decisions. In a game of complete information, all players possess full knowledge of every aspect of the game, including the players themselves, the timing of decisions, available actions, and resulting payoffs. Conversely, games of incomplete information entail certain aspects being concealed from the players. Crucially, each player's payoff is not solely determined by their own actions, but also influenced by the actions of other players. This interdependence among players' strategies forms the cornerstone of any game.

Therefore, to study the strategic decision making in this case we draw the game, considering a principal-agent model in which the founder (principal) selects the family protocol. There are two sibling types (agents) willing to manage the family firm, the child with higher skills for family firm management (E) and the child with lower skills (Y). The founder has two options, hiring E or Y.

The founder maximizes the following payoff function:

$$F = \pi(r_i) - \theta f(a_i)$$

$\pi(r_i)$ denotes the child's effort impact on the family firm profits. Given the child skills, i.e., managerial skills, competencies and know-how, the family firm performance will increase with the siblings' efforts, given by r_i , since $\pi'(r_i) > 0$. Moreover, the family firm performance increases at a decreasing rate as $\pi''(r_i) < 0$. Each child will earn a different payment for his effort (a_i) and this payment decreases the founder's payoff (where $f'(a_i) > 0$ and $f''(a_i) > 0$). Let θ measure the intensity of that cost for the founder, since the payment can be addressed as salary, family firm's shares, or other compensation scheme.

The sibling's utility function is given by:

$$A = h_i u(a_i) - k d(r_i)$$

Let $u(a_i)$ stand for the benefit of the sibling for his payment, a_i , which increases at a decreasing rate since $u'(a_i) > 0$ and $u''(a_i) < 0$. The agent cost is increasing with the effort $d(r_i)$ at an increasing rate as $d'(r_i) > 0$ and $d''(r_i) > 0$. Each child may differ also in the emotional importance each child gives to legacy and emotional factors, h_i , given the payment scheme. Let k , be the costs of the child with lower skills, where $k > 1$. Notice that $k = 1$, when the child has high skills.

When the siblings' efforts, r_i , is observable (under symmetric information) by the founder, solving the maximization of the founder's payoff function, F , subject to the participation constraints.

$$h_Y u(a_Y) - k d(r_Y) > B \text{ and}$$

$$h_E u(a_E) - d(r_E) > B$$

where B stands for the child's payoff from his best career option outside the family firm (net of any costs).

5. Results

Solving the Kuhn-Tucker conditions, the solution for the child with higher skills is given by:

$$\left\{ \begin{array}{l} h_E u(a_E) - d(r_E) = B \\ \pi'(r_E)/d(r_E) = \theta f'(a_E)/h_E u'(a_E) \end{array} \right.$$

Whereas, the solution for the child with higher skills is:

$$\left\{ \begin{array}{l} h_Y u(a_Y) - k d(r_Y) = B \\ \pi'(r_Y)/d(r_Y) = \Theta k f'(a_Y) / h_Y u'(a_Y) \end{array} \right.$$

Therefore, contracts are different for each sibling, and we can conclude that $r_E > r_Y$.

If we consider the scenario where the effort of the siblings (r_E and r_Y) are not observable by the founder, the need to design a menu of contracts in the Protocol is irrefutable. Let p be the probability of being a child with high skills. PAT solves this adverse selection problem where siblings reveal their type when accepting a specific contract of the Protocol (in the PAT, this is the Revelation Principle). Under this asymmetric information, the founder optimization problem is now:

$$\begin{aligned} \text{Max} \quad & p[\pi(r_E) - \Theta f(a_E)] + (1-p)[\pi(r_Y) - \Theta f(a_Y)] \\ \text{subject to: } & (CP^Y) \quad h_Y u(a_Y) - k d(r_Y) > B \\ & (CCI^E) \quad h_E u(a_{YE}) - d(r_E) > h_E u(a_Y) - d(r_Y) \end{aligned}$$

Solving the Kuhn-Tucker conditions, the solution for the child with higher skills is given by:

$$\begin{aligned} h_Y u(a_Y) - k d(r_Y) &= B \\ h_E u(a_E) - d(r_E) &= h_E / h_Y * (B + k d(r_Y)) \\ \pi'(r_E)/d(r_E) &= \Theta f'(a_E) / h_E u'(a_E) \\ \pi'(r_Y)/d(r_Y) &= \Theta k f'(a_Y) / h_Y u'(a_Y) + \Theta f'(a_E) / u'(a_E) * (p/(1-p)) * (k/h_Y - 1/h_E) \end{aligned}$$

Therefore, the contracts for each sibling are different from symmetric information, since:

- there will inefficiency in the child with lower skills
- there will efficiency in the child with higher skills, since the effort is equal to the symmetric information scenario
- the child with higher skills has a surplus higher than B

In terms of the impact on the contract menu:

- when k increases, r_E and r_Y decreases and a_E increases;
- when Θ increases, a_E , r_E , a_Y and r_Y decreases;
- when h_E increases, both a_E and r_E increase, but both a_Y and r_Y decrease;
- when h_Y increases, r_Y increases;
- when p increases, both a_Y and r_Y decrease.

6. Conclusions

The findings of our model reveal that in the face of uncertainty regarding the orientation of potential children, factors such as their Leadership skills (including proficiency in business-related areas) and their Family Orientation (which reflects their value and commitment to the family business as an extension of the family), as presented by Jayantilal et al., 2020, play crucial roles in the selection of a successor.

Our findings underscore the importance of designing the family protocol to accommodate diverse scenarios within family firms. Specifically, we demonstrate that the family protocol can be structured to ensure that no siblings are excluded from joining the family firm, even in cases where there is a significant differentiation between them ($k > 1$). However, as the level of differentiation increases, it inevitably leads to a decrease in the level of effort undertaken (r_E decreases), particularly by the more endowed child.

Moreover, when the founder attaches high value to the family firm and finds it challenging to relinquish control (high levels of Θ), they tend to impose lower demands on their successor in terms of required effort (as seen by decrease in r_E and r_Y). Additionally, if a child possesses a strong Family Orientation and exhibits a high level of motivation to join the family firm (high levels of h_i), the proposed contract is likely to be more demanding (as seen by increase in r_E).

These various scenarios demonstrate the flexibility of the family protocol in accommodating different situations. To achieve this, a range of menus containing possible "contracts" or requirements can be established to promote higher efficiency within the firm and incentivize siblings to develop their capabilities, thereby creating greater value for the family firm.

In contexts characterized by uncertainty, the design of the family protocol becomes paramount in achieving optimal outcomes therefore we call for further research in this area.

Acknowledgements

This work was supported by the UIDB/05105/2020 Program Contract, funded by national funds through the FCT I.P.

References

- Abouzaid, S. (2018). *IFC family business governance handbook*. World Bank Group.
- Arifa, C., & Islam, S. M. N. (2020). "Corporate governance: A game theory-based mechanism design approach". In AFAANZ 2020 Conference, Melbourne.
- Aronoff, C. E., & Ward, J.L. (1995). Family-owned businesses: A thing of the past or a model for the future? *Family Business Review*, 2, 121-130.
- Arteaga, R., & Uman, T. (2020). Managing family business tensions: The narrative of family history. *Baltic Journal of Management*, 15(5), 669-686.
- Arteaga, R., & Escribá-Esteve, A. (2021). Heterogeneity in family firms: Contextualising the adoption of family governance mechanisms. *Journal of Family Business Management*, 11(2), 200-222.
- Balsmeier, B., Bermig, A., & Dilger, A. (2013). Corporate governance and employee power in the boardroom: An applied game theoretic analysis. *Journal of Economic Behaviour & Organization*, 91, 51-74.
- Berent-Braun, M.M. & Uhlaner, L.M. (2012). Family governance practices and team building: Paradox of the enterprising family, *Small Business Economics*, 38(1), 103-119.
- Bernal, L.L.H. (2021). Business Mediation and the Generational Succession in Family Companies. *Revista de Mediacion*, 14(1).
- Bloemen-Bekx, M., Van Gils, A., Lambrechts, F., & Sharma, P. (2021). Nurturing offspring's affective commitment through informal family governance mechanisms. *Journal of Family Business Strategy*, 12(2).
- Blumentritt, T., Mathews, T., & Marchisio, G. (2013). Game Theory and Family Business Succession: An Introduction. *Family Business Review*, 26(1), 51-67.
- Comelles, C.A. (2020). Mediation, succession disputes and family business. *Revista de Mediacion*, 13(1).
- Crespi, R., & Renneboog, L. (2010). Is (institutional) shareholder activism new? Evidence from UK shareholder coalitions in the pre-cadbury era. *Corporate Governance an International Review*, 18(4), 274-295.
- Davis, J., & Tagiuri, R. (1982). The influence of life stages on father-son work relationships in family companies (Unpublished manuscript). School of Business Administration, University of Southern California.
- Gallo, M., & Kenyon-Rouvinez, D. (2005). The importance of family and business governance. In Kenyon-Rouvinez, D., & Ward, J.L. (Eds.), *Family business: Key issues*, (pp. 45-57). Basingstoke, UK: Palgrave/Macmillan.
- Gersick, K.E., Lansberg, I., Desjardins, M., & Dunn, B. (1999). Stages and transitions: Managing change in the family business. *Family Business Review*, 12(4).
- González-Cruz, T.F., Clemente-Almendros, J.A., & Puig-Denia, A. (2021). Family governance systems: The complementary role of constitutions and councils. *Economic Research-Ekonomska Istraživanja*, 34(1), 3139-3165.
- Hurwicz, L., & Reiter, S. (2006). *Designing Economic Mechanisms*. Cambridge University Press.
- Islas-Moreno, A; Munoz-Rodriguez, M; Santoyo-Cortes, VH; Martinez-Gonzalez, EG; Aguilar-Gallegos, N; Morris, W. (2021). The role of conflict in the adoption of governance practices in family businesses. *Journal of Family Business Management*.
- Jayantilal, S., Jorge, S. F., & Palacios, T. M. B (2016a). Effects of sibling competition on family firm succession: a game theory approach, *Journal of Family Business Strategy*, 7(4), 260-268.
- Jayantilal, S., Jorge, S. F. & Palacios, T. M. B (2016b). Founders' approach on successor selection: Game theory analysis, *Journal of Economics and Economic Education Research*, 17(3), 74-87.
- Jayantilal, S., Jorge, S. F. & Palacios, T. M. B (2019). First mover advantage on family firm succession, *International Journal of Applied Management Science*, 11(3), 243-254.
- Jayantilal, S., Jorge, S.F. e Palacios, T. B. (2020). Paternalism in family firms' successor selection, *Academy of Strategic Management Journal*, 19 (4), 1-12.

- Jayantilal, S., Jorge, S.F., Lourenço, D., Botelho, A. and Bañegil, T.M. (2022). Cultural alignment and intergenerational succession in family firms: a game-theoretical experiment, *Journal of Family Business Management*.
- Leach, P. & Bogod, T. (1999). *Guide to the family business*. Biddles Ltd, London.
- Li, X.A. (2011). Research on the trust game model of stockholder's harmonious management: From the social capital viewpoint. *Applied Economics, Business and Development*, 208, 531-537.
- Li, Z.H., & Daspit, J.J. (2016). Understanding family firm innovation heterogeneity: A typology of family governance and socioemotional wealth intentions. *Journal of Family Business Management*, 6(2), 103-121.
- Matias, C., & Franco, M. (2021). The role of the family council and protocol in planning the succession process in family firms. *Journal of Family Business Management*, 11(4), 440-461.
- Montemerlo, D., & Ward, J.L. (2011). *The family constitution: Agreements to secure and perpetuate your family and your business*. Palgrave Macmillan, New York.
- Neubauer, F., & Lank, A. (1998). *The family business: Its governance for sustainability*. MacMillan Press Ltd., Houndmills.
- Kelley, D., Gartner, W. B., & Allen, M. (2020). *Global entrepreneurs monitor family business report*. Babson Park: Babson College Press, Babson Park, MA.
- Kreps, D.N. (1990). *Game Theory and Economic Modelling*. Clarendon Lectures in Economics.
- Peng, S.Z., & Tian, G.S. (2008). "Study on the effect of Share Repurchase on the Basis of Game Theory". In 2nd International Conference on Risk Management and Engineering Management.
- Poza, E.J. (2010). *Family business* (3rd ed.). South-Western, Mason, OH.
- Samuelson, W.F., & Marks, S.G. (2015). *Managerial economics*. Wiley.
- Wang, M.C., & Chiu, S.T. (2013). The function of independent directors with different payoff rules: The issue of shareholder activism. *International Journal of Human Resource Management*, 24(15), 3020-3030.
- Ward, J.L., & Gallo, M.A. (1992). *Protocolo familiar* (Technical Note: DGN-448, IESE). Business School, Universidad de Navarra, Pamplona.
- Wong, T.K.H. (1989). An application of game theory to corporate governance. *Omega*, 17(1), 59-67.
- Zhao, C.W., Liu, L., & Wang, P. (2011). "Corporate strategy, cognition of outside director and board structure", In 6th International Symposium on Corporate Governance (pp.581-585).

Crowdfunding as Entrepreneurial Funding for Investigative Journalism in Portugal

Natacha Jesus-Silva¹, Maria Dos-Santos^{2, 3}, Nuno Baptista² and Fernando Mata⁴

¹Universidade Portucalense Infante D. Henrique, Porto, Portugal

²Escola Superior De Comunicação Social – Instituto Politécnico de Lisboa, Lisbon, Portugal

³ISCTE-IUL DINÂMIA'CET, ISCTE-Instituto Universitário de Lisboa, Lisbon, Portugal

⁴CISAS – Center for Research and Development in Agrifood Systems and Sustainability, Instituto Politécnico de Viana do Castelo, Portugal

natachajsilva@upt.pt

msantos@escs.ipl.pt

nbaptista@escs.ipl.pt

fernandomata@ipvc.pt

Abstract: The 2007 financial and economic subprime crisis arising from the collapse of the Lehman Brothers Bank in the USA had severe impacts on all the economic sectors. Journalism in Portugal was highly affected, and the most remarkable impacts led to editorial budget cuts. These cuts led to a drastic decrease in human resources in newsrooms, leading to a consequent breach of investigative journalism. These aspects resulted in a surge in unemployment for many experienced journalists, a decrease in the quality of information, and the consequent impoverishment and reduction of research journalism, with losses for the entire Portuguese society. Considering this context there is the need to explore alternative sources of funding for research journalism. Crowdfunding has been portrayed as an alternative to traditional models of financing research journalism, capable of generating a new dynamic, to provide for a more skilled and informed society. The main goal of this paper is to analyze crowdfunding as a tool to fund Portuguese investigative journalism. The methods include a narrative literature review on the causes, impacts, and consequences of the decrease in Portuguese investigative journalism and a case study methodology focused on the Portuguese platform of journalism crowdfunding 'I Fund News'. In addition, qualitative research was applied to analyze the curricula of Portuguese journalism degrees with minors in entrepreneurship, business, and economics. The results show that the number of ECTS courses in entrepreneurship, business, and economics in journalism and communication degrees is very low in the Portuguese higher education sector. A relationship between entrepreneurship, business, economics, and the capacity for journalists to readapt and find the necessary funding sources is established. These results may be of interest to Portuguese policy makers and higher education stakeholders, to promote the development of study programs with increased entrepreneurship, business, and economics courses. More literate journalists in the referred subjects may enhance their entrepreneurial potential and, consequently, their freelance potential to develop investigative journalism projects.

Keywords: Crowdfunding, Research journalism, Higher education, Entrepreneurship, Communication science

1. Introduction

The crisis that hit journalism in general and Portuguese in particular, since the subprime economic and financial crisis that began in the USA in 2007 and reflected in European economies in general and Portugal in particular, has led to a reduction in costs in newsrooms (Dos-Santos & Ahmad, 2019). This led to a reduction in the number of journalists, who in turn are responsible for a larger number and diversity of news. At the same time, the cuts in funding for journalistic investigation, the increase in "agency journalism", and the lack of definition for funding models for traditional and online newspapers, led to a sharp decrease in the quality and, above all, the quantity of investigative journalism (Dos-Santos & Ahmad, 2019).

Portugal, in response to the impacts of the financial economic crisis, to make the Portuguese economy competitive and simultaneously meet the educational objectives of the Europe 2020 Strategy defined by the European Commission, made, mainly, since the beginning of the 2000s, remarkable efforts in the education and training of its traditional student population. The aim was to improve their qualification levels to allow them to be more competitive in an increasingly globalized and demanding market (Dos-Santos & Ahmad, 2019). Thus, progressively, the levels of education and training of the Portuguese population have been increasing. Therefore, it is assumed that we have more informed citizens. This situation gives rise to the need for a new paradigm about funding models and the production of news, to contribute to a more informed and capable population. These funding models may be applied to journalistic projects in pursuit of one of the objectives of journalism: to guarantee the public's investigation and subsequent access to specific topics of interest to them and not merely submitted to the media's agenda.

Simultaneously, the media industry is experiencing one of the most important crises in its recent history, which is not unconnected to the global economic and financial crisis with the onset of the subprime crisis in mid-2007 and which has expanded across Europe in general and Portugal in particular since 2008. The growing offer of online news is challenging the traditional media organization models. At the same time, news consumption patterns have changed dramatically in recent years with the press and television registering lower levels of demand, while online news consumption has skyrocketed (Becker et al., 2015; Alcolea-Díaz et al., 2021).

The traditional media crisis and the growing dissatisfaction of consumers, create the conditions for journalism to be reinvented through emerging journalistic practices that are adapted to the online environment (Antonopoulos et al., 2020). The increase in applications for reading news on mobile platforms has further increased competition and accelerated survival strategies. The digital market is thus revealed to be the result of a constant and unstoppable evolution increasing the distance between the consumers of news and to the traditional media (Dos-Santos & Ahmad, 2019). News has become a consumer's good available at zero cost. Any online user can provide free content with lower production costs (Carvajal et al., 2012) which also contributes to the publishers' struggle to find a sustainable business model that finances their newspapers and the workforce. Simultaneously, revenues from online advertising are insufficient to compensate for dwindling press revenues, which leads to more cost cuttings.

In a world marked by crises, investigative journalism assumes a special importance (Coombes & Doshi, 2022). However, with the print advertising market extremely small and fragmented and consumers accessing free online content, there are very few funds left to finance quality investigative journalism. Lack of resources has consequences for newsrooms: it affects the quality of research and fact-checking. Fewer journalists reporting more news, with prejudice to their quality, excessive use of news from agencies, and fewer correspondents are just some of the consequences of this reduction (Becker et al., 2015; Jacobson & Marino, 2021).

Particularly in Portugal, some questions arise in the face of the country's current journalistic landscape: Is there a solution for the economy of digital investigative journalism that does not pass through the revenues of the printed model and subscribers? Are non-profit organizations the only viable path to public interest journalism? What is the role of crowdfunding in this process with the support of social networks? Are Portuguese journalists and their readers prepared for this challenge?

As newsrooms devote less interest and space to investigative journalism, freelance journalists are faced with fewer opportunities to work on this type of project and finance their costs (Jacobson & Marino, 2021). Crowdfunding (collaborative financing) proves to be an option for these professionals, who can thus overcome the constraints of lack of funding (Dos-Santos & Ahmad, 2019). Simultaneously, users can suggest topics of interest that they believe deserve journalistic attention and investigation, and this process can solve an important gap in current journalism (Carvajal et al., 2012; Harlow, 2021). As media companies face difficulties to remain financially viable, and closures become more prevalent, crowdfunding has been highlighted as one way for journalists to finance their activity and produce work outside of mainstream media (Hunter & Di Bartolomeo, 2019). One of the functions of journalism is to give a voice to those who do not have one. It has also always served to give visibility to situations and people who otherwise would not have it (Dos-Santos & Ahmad, 2019).

This problem lies in the lack of definition in the face of increasingly intense cuts in media newsrooms, in travel costs for journalists and international correspondents, who bring other worlds to the world through their activity on the ground. On the one hand, some journalists meet the necessary conditions to develop journalistic investigation projects, excluding only financial constraints. On the other hand, there is an audience interested in seeing matters investigated that have no space in traditional media and are willing to pay for this information. At the outset, all the conditions are met for a crowdfunding platform applied to journalism to be a success in the Portuguese case. Most crowdfunding research is approached from the journalists' and donors' perspective, rather than exploring the contextual factors that affect the success of such projects, and crowdfunding studies mostly neglect a non-U.S. perspective (Harlow, 2021). Thus, the main objectives of this article are to analyze crowdfunding as an alternative funding model for the case of Portuguese investigative journalism.

2. Methodology

To explore the causes, impacts, and consequences of the decrease in Portuguese investigative journalism, a narrative literature review was undertaken following the procedures suggested by Ferrari (2015). A narrative format was preferred due to the exploratory nature of this research, the limited number of studies reporting on the Portuguese case, and the variability of the information sources and research designs of interest. A search of

peer-reviewed journals in the English, Spanish and Portuguese languages, in the topical areas of Communication and management studies was undertaken using the databases WOS and Scopus. The search used the terms “crowdfunding”, “journalism” and “investigative journalism” in conjunction with the term “Portugal”. To compensate for the reduced number of articles found in scientific databases, the authors also consulted news in credible mainstream and specialized media and sectorial reports.

In addition, a case study approach was adopted to study the ‘I Fund News’ platform. Case study methodologies are a suitable approach to uncover the interaction of structure, events, actions, and context, in order to identify possible causal mechanisms (Wynn & Williams, 2012). The data for the case study was obtained through consultation of the company’s public documentation, news, and semi-structured interviews with active investigative journalists from the press and television. Eleven interviews were conducted for this purpose, including an interview with the manager of the crowdfunding platform “I fund News”. The data analysis method consisted of content analysis. The interview guide and the coding scheme for the content analysis reflected the objectives of this research. The data collected from the interviews was digitally recorded, and notes were taken during the interviews. Audio content was transcribed verbatim by and compared with notes.

Finally, content analysis was applied to analyze the curricula of Portuguese journalism degrees with minors in entrepreneurship, business, and economics based on the consultation of government reports, University Websites. All universities in the country with journalism courses were contacted to question about course curricula plans, through a “dissemination tour” an action that aimed to “knock on doors to go directly to potentially interested people”.

3. Background and Development of Crowdfunding

The sharing economy or crowdfunding in the case of journalism originated in Spot.us which is a community-based platform for journalists in California, created in 2006 by David Cohn, (Carvajal et al., 2012). However, the origin of the term crowdfunding results from its adaptation to another concept that, for some time, was announced as a precursor to the death of journalism, crowdsourcing (Dos-Santos & Ahmad, 2019). In this context, it was believed that each user could be a journalist, an idea that also became known as citizen journalism and of which today only a few collaborative and non-substitutive examples remain.

Howe (2006) used the term crowdsourcing for the first time, to define the process through which a network obtains resources such as ideas, solutions, or contributions related to economic activities, to bring together the creative solutions of a distributed network of individuals. The author also stressed that the use of the term would be open to a variety of processes in dependence on contributions from the crowd: crowd wisdom (collective intelligence), crowd creation (user-generated content), crowd voting (linked to participation) and crowdfunding. For some authors crowdsourcing has become synonymous on online fundraising (Hunter & Di Bartolomeo, 2019). Web 2.0 is a prerequisite for the development of crowdsourcing, without this structure companies could not reach the necessary pull of participants and public (Dos-Santos & Ahmad, 2019). Web 2.0 can be defined from different points of view (Dos-Santos & Ahmad, 2019): technologically, it is based on computers capable of processing information, which means that it can be disseminated more easily and recombined in other formats. Sociologically, Web 2.0 represents the beginning of networking of individuals who share common interests. From an economic point of view, it is characterized by the ability of anyone to create content and place it on the network. These characteristics generate an abundance of information that collides with a lack of attention on the part of consumers, unable to deal with all the information available.

With the launch of ‘Kickstarter’ in 2009, the first step was taken towards the creation of a platform aimed at hosting only creative projects, to be financed through an “all or nothing” model, where the creator of the project can only validate it if it reaches the goal proposed when launching the crowdfunding campaign. A model that is now common to a diverse number of projects. The simplicity of crowdfunding is one of the secrets of this platform’s success, as well as the established rules for the operation of the financing process and the bypass traditional gatekeepers (Chiesa & Müller, 2020). All projects present on the platform must be included in the creative arts, they cannot be solidarity initiatives, they must declare the amount that the project needs to reach, as well as the respective end date.

Since then, several international crowdfunding platforms have emerged and expanded into different areas and domains, such as ‘IndieGoGo’ and ‘RocketHub’, which are also used to finance similar generalist projects. However, the latter opted for a different financing model, in which the creator may be able to finance a project even if it does not reach the stipulated goal. Some platforms pre-select ideas based on their criteria while others

automatically publish all projects. In the first case, selection is usually based on the experience of the project promoter and its feasibility.

Regarding journalistic projects, 'Spot.us' is the first and most famous international platform in the context of crowdfunding (set up in 2006). This site has operated as a community that funds freelancers and journalists through user donations. Journalists present their work to users or they indicate a topic on which they would like to obtain journalistic investigation. While journalists hope to obtain funding as their work takes shape, funders rely on journalists' feedback, i.e. on the work to be delivered. If the first ones are successful, traditional media can then buy the stories in question and publish them. Otherwise, they are only published on the website. As such, journalists revert to their original role as intermediaries. This relationship takes place on the platform, promoting transparency and becoming possible through donations from funders (Schwienbacher & Larralde, 2012; Antonopoulos et al., 2020). Thus, crowdfunding aggregates the power of the crowd to finance small enterprises, and projects with little possibility of being supported by traditional means, using platforms or social networks such as Twitter or Facebook (Dos-Santos & Ahmad, 2019).

4. Motivations for Participating and Financing Crowdfunding

According to Kleemann et al. (2008), participants in the case of crowdsourcing projects, have intrinsic and extrinsic motivations. In the first case, they act motivated by the pleasure or fun of performing a certain task, while the extrinsic motivations are related to an external reward, such as money, goods, professional benefits, learning, recognition, or even a certain degree of dissatisfaction with current products.

Gerber et al., (2011), Agrawal et al., (2003) and (Antonopoulos et al., 2020) conclude that in the case of crowdfunding, individuals are motivated to participate by the social interactions provided by the platforms, namely, strengthening the commitment to an idea through feedback, for creators or, in the case of funders, feelings of connection to a community with similar interests and ideas. For creators, there are two main motivations which include a lower cost of capital and easier access to more information in addition to important motivations related to the feedback they can get from funders, generating a more participatory type of media environment (Hunter & Di Bartolomeo, 2019).

As for the incentives of the funders, they go through five different aspects, namely, access to investment opportunities, participation in the community, and support for a product, service, or idea, with philanthropy playing a surprisingly significant role in most crowdfunding platforms and the formalization of contracts (Agrawal et al., 2003). Aitamurto (2011) concludes that the main motivation of funders is to contribute to the common good and social change. As such, they are also promoters of investigative journalism.

4.1 Crowdfunding Financing

Crowdfunding raises funds to invest, usually through social networks. Rather than raising funding through the traditional financial system, crowdfunding helps individuals or companies to raise funding through a larger audience, the crowd, in which each individual provides a small amount. From a financial point of view, it can be defined as the cooperation of individuals who invest their money in a project or product. From an economic point of view, it provides a better fit between supply and demand, which results in a more efficient production process (Belleflamme et al., 2010; Hunter & Di Bartolomeo, 2019).

From the financial perspective of individuals who launch and fund projects on platforms, creators try to generate value for the individuals who support them, according to the founders of the largest platforms (Dos-Santos & Ahmad, 2019). While it is not a donation, crowdfunding is not an investment either. The relationship between creators and funders is new and is deeply related to the economics of social networks. Funders always get something in return for the projects they support, and each one receives rewards in return for the donations they make, but funders are not investors, as they generally do not obtain financial benefits nor are they shareholders (Barabas, 2012).

Compared to the support of financial services, a key difference lies in the funder participating in crowdfunding who usually has an entrepreneurial aspect associated with their enthusiasm, understanding the potential of the project and having the intrinsic need to become a part of the group that will "make it happen". Often, the funder does not have enough resources to fund an entire project or the same range of skills that can be found in a specialist from a venture capital company. However, the funder usually identifies itself with the project, is open to change, and is happy to help giving the project a social dimension (De Buysere et al., 2012). Schwienbacher & Larralde (2010) argue that a crowd can often be more efficient than an isolated individual or even a team, in solving certain business problems. According to these authors, the risk assumed by each investor is also smaller,

not only because each individual contributes with a smaller amount, but also because the contributing crowd becomes a potential consumer of the product or service in question, in addition to having an extra incentive to publicize it once it reaches the market.

Until now, profit maximization has been a rare objective in crowdfunding. At the same time, the risk of failure does not necessarily translate into a risk of capital loss, because success, for the financier, is normally not defined through financial return (De Buysere et al., 2012). These authors together with Agrawal et al., (2011), Agrawal et al., 2013 and Mollick, (2012) propose an exhaustive classification of twelve different funding crowdfunding models: donations; rewards; pre-sales; loans, social loans; peer-to-peer (private) lending; peer-to-business lending; equity; profit sharing; reward in kind; in-kind financing; and hybrid models.

5. The Development of Crowdfunding in Portugal

In Portugal, the first generalist crowdfunding platform emerged in 2011, offering a service similar to the American 'Kickstarter'. Currently, there are two generalist projects: 'Massivmov' and 'PPL', which welcome proposals of different types, with a common denominator, that is, entrepreneurial projects aimed at creating value for the entrepreneur, the supporters, and society in general. These platforms are regulated by Law n.º 102/2015 published in *Diário da República*, which establishes the legal regime of crowdfunding or collaborative financing.

The most recent data published on crowdfunding for the Portuguese case, on all platforms, whether generalist or journalistic projects, point to transactions worth around €2,200,000 since they appeared. Although this amount is comparatively reduced, especially when compared to the North American market, the trend is growing (Lusa, 2014; Público, 2022). These numbers are just an estimate, as there are no data from official statistics, they are based on the sum of the different values publicized by existing platforms and data from secondary sources (Statista, 2021).

5.1 The Portuguese Investigative Journalism Platform I Fund News

Regarding exclusive platforms for journalistic projects, there are currently only two in Portugal, 'I Fund News' and 'TNT' (Television that is Not Television). The latter produces a weekly edition of a television that can be considered an alternative and that, on its website, details the monthly costs of the platform and the purposes for which each of the five euro contributions will be used, an amount that each user can contribute to the project individually. TNT was excluded from this analysis since it proposes to carry out a weekly television broadcast, therefore moving away from the intended scope.

Given the constraints and financial restrictions associated with a population with higher education levels in Portugal, in addition to the existence of a large number of journalism professionals, it would be expected that a crowdfunding platform created exclusively to host journalistic projects would be in great demand by journalism professionals and the general public (Dos-Santos & Ahmad, 2019). But in fact, this does not happen. The restricted dimension of the Portuguese market's demand for crowdfunding was reinforced in all interviews and primary and secondary documentary sources. These results indicate that the higher education system is training journalists with low entrepreneurial capacity as well as internationalization and culture.

The aim of the project was, according to those responsible (Carvalho, 2015 and others cp, 2015), to have a social impact, finding solutions for unemployed journalists or freelancers and the possibility of developing more informal job opportunities. On the other side, the avenue was open for journalists to propose controversial projects that had no place in other traditional media and that could be investigated through this platform.

The initial project comprised three phases, but, as there was no continuity, they ended up in the beta phase, that is, in the initial phase. In phase two, the intention was to internationalize the project through the figure of a translator who would translate the works into other languages, thus allowing them to be made available in other countries. In a third phase, they intended to create the figure of the "editor/curator, someone who had an interest in creating a publication on a paper or digital support", bringing together works present on the platform. Despite the poor adherence, the 'I Fund News' platform remains available for use.

Several authors, in particular Mollick (2014) and Agrawal et. al., (2011; 2013) studied cases of success and failure of projects and the determining factors. A main reason of failure is the lack of demand. Since its launch in 2013 the 'I Fund News', platform was able to secure only one investigative journalism project, despite the significant media coverage in various online and traditional media, from magazines to television, from online editions to printed newspapers, including speciality blogs. Most experts interviewed agree that the main factor explaining the disappointing results was the reduced dimension of the Portuguese market. The fact that all the specialists

consulted agree with the small size of the Portuguese market in the demand for crowdfunding, suggests that its development will only be possible through internationalization, by focusing on research journalism themes that are in demand in a transnational level.

To make inferences about the entrepreneurial aspect of journalists since their initial training, the curricular plans of all the undergraduate, master's degree and PhD degrees courses in Communication Sciences (CC) and Journalism taught in all public and private Higher Education Institutions (HEIs) in Portugal were analyzed (Table 1). Regarding the degree of bachelor, of the six existing, courses only four of them offer specific curricular units (UC) in the area of Economics, which on average make up only one introductory UC with about 5 ECTS. In the master's degree, there is a complete absence, both in public and private HEIs of UCs in business, economics and entrepreneurship. Regarding PhD studies, no doctorates in journalism were identified. In the CC doctorates, the situation is not very different from masters. Only a private University in Portugal, the Universidade Lusófona do Porto (ULP), includes the UC economy in the doctorate curricula, which, in addition to important aspects of the social economy, also addresses in a very exhaustive way the sectoral development in the economic, social and environmental aspects. This particular UC has 7.5 ECTS and their evaluation is dependent on the completion by doctoral students of a peer-reviewed scientific article indexed in relevant databases. In this work, students are encouraged to investigate the causes and problems associated with the development of the sector, which includes, among other factors, the lack of entrepreneurship capabilities. In the doctorate at the Catholic University, among 26 possible options to choose from, there is an option for 'economics of culture', with little probability of being selected, considering that the course is offered by the Faculty of Human Sciences. This confirms that the current *curriculum* plans of communication sciences/journalism courses in Portugal are not prepared for this challenge, needing a more fortified domain of management skills, namely, strategy and international culture.

Table 1: Analysis of the presence of the scientific areas of Economics/Management/Entrepreneurship in the Curriculum Plans of HEIs in Portugal

Bachelor's Degree - Public University Higher Education			
University (U) / Polytechnic Institute (PI), Faculty (F)	Course	ECTS/ Economics/Management UC	Course Units
U Coimbra	Journalism and Communication	Not applicable	Not applicable
U Porto, F Letters	Communication Sciences Journalism, Consulting, and Multimedia	6 6	Introduction to economy Media Economy
U Coimbra, F Letters	Journalism	6	Socio-Economics of the Media
Bachelor's Degree - Private University Higher Education			
U Lusófona	Communication and Journalism	4	Economic Journalism
Bachelor's Degree - Polytechnic Public Higher Education			
PI Lisbon, ESCS	Journalism	5	Economic analysis
PI Portalegre, ESE	Journalism and Communication	Not applicable	Not applicable
Master's Degree - Public University Higher Education			
U. Beira Interior	Journalism	Not applicable	Not applicable
U. Coimbra, F Letters	Communication and Journalism	Not applicable	Not applicable
U.Minho	Communication Sciences - Information and Journalism	Not applicable	Not applicable
New U Lisbon, F Social & Human Sciences	Journalism	Not applicable	Not applicable
Master's Degree - Private University Higher Education			
U Lusófona	Journalism, Politics, and Contemporary History	Not applicable	Not applicable
U Catholic , Braga	Social Communication: Media and Journalism	Not applicable	Not applicable

Master's Degree - Polytechnic Public Higher Education			
PI Lisbon, ESCS	Journalism	Not applicable	Not applicable
PI Portalegre, ESE	Journalism, Communication, and Culture	Not applicable	Not applicable
Doctor's Degree - Public/Private University Higher Education			
U Católica, F Human Sciences	Communication Sciences	6 – optional	Economy of Culture Option (among 26 CUs)
U. Lusófona	Communication Sciences	Not applicable	Not applicable
U Lusófona Lisbon + ISCTE + IUL + UBI + U Minho	Communication Studies: Technology, Culture, and Society	Not applicable	Not applicable
U Lusófona, Porto	Studies in Communication for Development	7.5	Social and Development Economy
U. Coimbra, F Letters	communication Sciences	Not applicable (but with free options in the CSH area)	Not applicable
U Lisbon, F Letters	Cultural Sciences - Communication and Culture	Not applicable (but with Optional Seminar)	Not applicable
U Lisbon, F Letters + F Medicine	Voice, Language, and Communication	(no information available)	(no information available)
UTAD	Corporate Communications Department	Not applicable	Not applicable
U Algarve, F Human & Social Sciences	Communication, Culture, and Arts	Not applicable	Not applicable
U Minho	Communication Sciences	Not applicable	Not applicable
U Porto + U Aveiro	Information and Communication on Digital Platforms	Not applicable	Not applicable
New U Lisboa, F Social & Human Sciences	Communication Sciences	Not applicable	1 free option (10 ECTS)
ISCTE, IU Lisbon	Communication Sciences	Not applicable	Not applicable

Source: Access Higher Education; A3ES and Higher Education Institutions pages, 2015.

6. In Conclusion

The financial and economic crisis and the increase in the supply of journalistic services, facilitated by digitization, led to severe editorial budget cuts in traditional media, with impacts on investigative journalism. Crowdfunding can constitute an alternative to traditional financing models for entrepreneurs or companies intending to finance innovative projects, products or services. In the case of investigative journalism, several successful platforms have proved to be an option for professionals. Trought crowdfunding investigative journalism may have the support of funders willing to pay for reports that are not pursued by the mainstream media. This model has given rise to new ways of exercising the profession, with the crowd being able to propose the research topic. Since its launch in 2013 the project 'I Fund News' was able to finance a single investigative journalism project. We suggest that such short supply may not result from short demand from readers, but also from the lack of entrepreneurial capacity of journalists. The analysis of the curricular plans of all courses in academic degrees in Portugal confirmed that, except for a PhD in CC at the Universidade Lusofona of Porto, there is no objective approach to entrepreneurship, business or economics in the courses' curricula. It is suggested, therefore, the need for a greater and better integration of entrepreneurship and economics in the curricular plans. This could be achieved for example through partnerships involving Faculties of Economics and Management of the same or of other HEIs. Such solution would allow curriculum development without significant investments from the Universities. Even though this study does not delve into possible solutions to overcome curricula limitations, it shows that empirically there is still fundamental research to be done and that Universities are not doing enough in promoting entrepreneurship in the journalist profession. More in-depth analysis is needed to investigate the reasons for the failure of the crowdfunding platforms devoted to investigative journalism. It is important to

understand what paths journalists are following to overcome the problem of financing of investigative journalism, and to understand the attitude of financiers towards the possibility of contributing to journalistic investigation projects.

Acknowledgements

This work was supported by the UIDB/05105/2020 Program Contract, funded by national funds through the FCT I.P.

References

- Agrawal A., Catalini C., Goldfarb A. (2011) "The geography of crowdfunding" NBER Working Paper, no. 16820, Cambridge. Available in: <http://www.nber.org/papers/w16820> (Date consulted: May 10, 2015).
- Agrawal A., Catalini C., Goldfarb A. (2013). "Some simple economics of crowdfunding" *NBER Working Paper*, no. 19133, Cambridge, Available at: <http://www.nber.org/papers/w19133> (Date consulted: 30 September 2023).
- Aitamurto, T. (2011). "The impact of crowdfunding in journalism – A case study of Spot.us, a platform for community-funded reporting" *Journalism Practice*, Vol 5, No. 4, pp 23-35.
- Alcolea-Díaz, G., Pérez-Serrano, M., Sorrentino, C. (2021) "Engagement, community and crowdfunding: journalistic product on demand in the environment of Covid-19" *Observatorio Journal*, Vol 15, No. 4, pp 96-115.
- Antonopoulos, N., Lamprou, E.D., Kiourexidou, M., Konidaris, A., Polykalas, S. (2020) "Media websites services and users subscription models for online journalism" *Media Watch*, Vol 11, No. 2, pp 310-322.
- Barabas, R.L. (2012). *Crowdfunding: Trends and Developments Impacting Entertainment Entrepreneurs*, Available at: <http://www.disantobowles.com/wp-content/uploads/2012/10/EASLSummer121.pdf> (Date consulted: January 10, 2015).
- Becker, V., Gambaro, D., Souza Filho, G.L. (2015) "The impact of digital media on Brazilian television: decrease in audience and increase in revenue" *Key Word*, Vol 18, No. 2, pp 341-373.
- Belleflamme, P., Lambert, T.; Schwienbacher, A. (2014) "Crowdfunding: Tapping the Right Crowd" *Journal of Business Venturing*, Vol 29, No. 5, pp 585–609.
- Bogost, I. (2012). *Kickstarter: Crowdfunding Platform or Reality Show?* Fast Company, 2015. Available at: <http://www.fastcompany.com/1843007/kickstarter-crowdfunding-platform-or-reality-show>. (Date consulted: September 30, 2023).
- Carvajal, M., García-Avilés, J. A., González, J.L. (2012) "Crowdfunding and non-profit media" *Journalism Practice*, Vol 6. No. 5-6, pp 638-647.
- Chiesa, C.D., Müller, M.S. (2020) "What is the shape of crowdfunding calls for Journalism? A content analysis of projects on Kickstarter (2010-2018)" *Media & Journalism*, Vol 20, No. 36, pp. 55-72.
- Coomes R., Doshi, P. (2022) "Crowdfunding investigative journalism at The BMJ" *The BMJ*, Vol. 376, o803 doi:10.1136/bmj.o803
- De Buyser K., Gajda O., Kleveland R., Marom D. (2012). *A Framework for European Crowdfunding*. Mediascope Europe, Available at https://d21buns5ku92am.cloudfront.net/26522/documents/17930-1351284179-FRAMEWORK_EU_CROWDFUNDING.pdf. (Date consulted: September 30, 2023).
- Dos-Santos, M.J.P.L., Ahmad, N. (2019) "Crowdfunding como alternativa para el desarrollo del periodismo de investigación: análisis del sector educativo en Portugal" *Comunicación Y Sociedad*, pp 1-23. doi: 10.23870/cys.v2019i0.7374
- Ferrari, R (2015) "Writing narrative style literature reviews" *Medical Writing*, Vol 24, No. 4, pp 230–235.
- Gerber, E.M., Hui, J.S., Kuo, P.Y. (2012). *Crowdfunding: Why People Are Motivated to Post and Fund Projects on Crowdfunding Platforms*. Working paper Northwestern University Creative Action Lab. Available in: http://distworkshop.files.wordpress.com/2012/01/dist2012_submission_11.pdf. (Date consulted: September 30, 2023).
- Harlow, S (2021) "Entrepreneurial News Sites as Worthy Causes? Exploring Readers' Motivations Behind Donating to Latin American Journalism" *Digital Journalism*, Vol 9, No. 3, pp 364-382.
- Howe, J. (2008). *Crowdsourcing. Why the power of the crowd is driving the future of business*. Three Rivers Press, New York.
- Howe, J. (2006), *The Rise of Crowdsourcing*. Wired Review, 10(1), pp. 21-33.
- Hunter, A., Di Bartolomeo, J. (2019) "We're a movement": crowdfunding, journalism, and feminism , Feminist" *Media Studies*, Vol 19, No. 2, pp 273-287.
- Jacobson, S., Marino, J. (2021) "Crowdfunding Long-Form Journalism: Characteristics of Funded Pitches on Kickstarter" *Journal of Magazine Media*, Vol 21, No. 2, pp 17-44.
- Kleemann, F., Vob, G., Rieder, K. (2008) "Un(der)paid Innovators: The Commercial Utilization of Consumer Work through Crowdsourcing" *Science Technology, and Innovation Studies*, Vol 4, pp 5-26.
- Lamert, T., Schwienbacher, A. (2010). *An Empirical Analysis of Crowdfunding*. Prepared for the Economics France workshop, Available at <http://www.crowdsourcing.org/document/an-empirical-analysis-of-crowdfunding-/2458>. (Consultation date: 10 April 2015).
- Lawton K., Marom, D. (2010). *The Crowdfunding Revolution: Social Networking Meets Venture Financing* Available at: http://aims.stanford.edu/images/speakers/2-9-11_lawton/020911%20AIMS%20lawton%20flier.pdf (Date consulted: February 10, 2015).

- Mollick, E. (2014). "The dynamics of crowdfunding: Determinants of Success and Failure. An Exploratory Study" *Journal of Business Venturing*, Vol 29, No. 1, pp 1–16.
- Ramos, J., González, B., Llorca, R., Mayor, L., Porcel, R. (2013). *Micro Financiación Colectiva Crowd-funding: a new economic instrument for economic growth and employment. An analysis of the economic effects of Collective Micro-financing with special emphasis in the Spanish case*. Fundació Catalunya Europa, Barcelona, Available at:http://www.catalunyaeuropa.net/img/pdf/Paper_CF_Ateneu.pdf(Date consulted: March 10, 2015).
- Schwienbacher, A., Larralde, B. (2012). *Crowdfunding of small entrepreneurial ventures*. Cumming, DJ (Ed.), The Oxford Handbook of Entrepreneurial Finance, Oxford University Press.
- Steiberg, S., De Maria, R. (2012). *The Crowdfunding Bible: How to Raise Money for Any Startup, Video Game or Project*, J. Kimmich, Editions.
- Wynn, D. J., & Williams, C. K. (2012) "Principles for conducting critical realist case study research in information systems" *MIS Quarterly*, Vol 36, No. 3, pp 787–810.

Intelligent Behaviour Analytics: A Novel Framework for Effective Leadership Style Transitioning

Stephen Johnson, Adam Crizzle, Katharine Lam, Louise Toner, Ryan Marcovich and Paul Coulter

Birmingham City University, UK

stephen.johnson2@mail.bcu.ac.uk

adam.crizzle@bcu.ac.uk

katharine.lam@bcu.ac.uk

louise.toner@bcu.ac.uk

ryan.marcovich2@bcu.ac.uk

paul.coulter2@nhs.net

Abstract: The last three decades saw a reliance on the use of personality tests by businesses and organisations trying to gain a competitive advantage in the market through avenues such as recruitment, team building, leadership development and culture alignment. The commissioning of early 20th Century personality models such as DISC and Myers-Briggs are claimed to provide valuable insights and benefits in various aspects of the employment process. They have however been controversially debated in the academic community due to issues surrounding validity and reliability. Discussions concerning leadership styles and leaders responsible for managing employees, are similarly indeterminate despite being subject to extensive research and analysis for many decades. Academics have yet to provide a comprehensive explanation of the holistic mechanisms underlying effective leadership. Instead, they have argued over factors such as a leader's traits, attributes, power relations or unidimensional versus collaborative models of engaging a work force. Current leadership theory literature demonstrates a paucity of leader self-understanding and self-reflection. We consider these two attributes as fundamental qualities of effective leadership, whereby an individual can transform and enhance their use of any leadership style. In this paper, we propose an advanced 21st Century solution that leverages the Intelligent Behaviour Analytics (IBA) framework, incorporating a deep and more effective understanding of leaders and their ability to transition between different leadership styles. Additionally, this framework offers methods for transitioning to more effective leadership styles based on situational requirements and takes into account a leader's own emotional and behavioural registers. This approach offers a structured opportunity for leaders to identify any biases, understand the reasons that these may develop and furthermore, evaluate the efficacy of their own behavioural traits and the way they, as individuals interact, manage and lead a team. The IBA framework is a multi-stage, holistic approach that proposes to improve performance metrics, organisational culture, business outcomes and increased wellbeing.

Keywords: Leadership, Organisational culture, Intelligent behaviour analytics, Personality tests, Leadership styles

1. Introduction

Organisational culture was first identified in historical records as early as 431BC by Pericles who considered a culture of unified teamwork was key to Athens winning the Spartan war (Fisher 2000). The early 1980's saw the topic of organisational culture emerge as a key theme in academia and business. Bestselling authors benefitted from claims they made that, in order to be successful 'organisations needed to focus on their cultures' (Deal & Kennedy, 1982; Ouchi, 1981; Peters & Watermans, 1982). Accordingly, management staff have been exhorted to consider the implications on their organisation of its culture (Ogbonna & Harris, 2002).

Defining organisational culture and establishing reliable, consistent methods to measure distinct qualities and attributes, has however been challenging for researchers. The literature promotes substantial diversity of viewpoints, making it difficult to arrive at some universally accepted construct. One of the more widely acknowledged proposals by Schein (1992), identified organisational culture as being a combination of: artefacts, values, and basic assumptions. Later, Hawkins (1997) adapted Schein's model by subdividing it into: artefacts, behaviour, mind-set, emotional grounds, and motivational roots. The foundational contributions of Schein and Hawkins laid the groundwork for Professor Mannion's influential report, which garnered an impressive 97% consensus regarding definition, amongst participants (Mannion, et, al., 2009). They proposed that 'culture is the collective set of shared beliefs, values, attitudes, and behavioural norms prevailing in the workplace'. They articulated it 'encompasses local routines, traditions, ceremonies, and the ways in which individuals interpret and make sense of their immediate environment.' Moreover, they viewed such cultures as possibly being far from uniform or coherent. This notion was evidenced earlier by Boisnier & Chatman (2003), whose paper discussed potential issues arising from the role of subcultures emerging from different sections of the same organisation.

For researchers, such as Boisnier & Chatman (2003), Chandler (2019) and Lazazzara (2016), addressing problems arising from such complex and dynamic processes within organisational cultures, all concurred that effective leadership is required, to recognize, understand, and manage it effectively. Unfortunately, these complexities are further exacerbated when considering the numerous leadership styles competing for literary eminence. Models of leadership theories and leadership styles, vary significantly depending on specific perspectives and contexts from which they are viewed, whereby different situations may allow for different leadership styles and approaches to prevail (Northouse, 2016).

Personality tests are therefore, often employed in organizations to address or simplify a range of organizational challenges, improve scalability or potentially lower cost of operations, but their utility remains doubtful given the huge cost of poor practices on UK businesses (CMI, 2014;2018) with little in the way of practical solutions. Considering such issues, this paper argues that betterment of poor organisational cultures, requires effective leadership whose leaders demonstrate high levels of self-understanding, and only with high levels of self-understanding are leaders able to 'flex' and occupy multi-leadership styles.

2. Leadership

Schein's Organizational Culture Model (2010), proposed leadership as being central to organisational culture albeit; a complex and multifaceted concept that can be viewed from various perspectives, involving duties and qualities of the leader and of the group being led. Theories regarding leadership styles range from early trait and personality theories based on power relations and privilege (Allport 1937), to more recent 'empowerment models' such as Transformational Leadership which imbue the importance of engagement, co-creation, focus on values and ethics (Avolio, et. al., 1999). Such variation raises the issue as to which methods of leadership are better operationalised through the optics of task or relationship-driven outcomes (or both), whether this enterprise is effectively communicated by the leader, and subsequently interpreted by the group or organisation accordingly. This suggests that effective leadership requires not only the flexibility to adapt their leadership qualities but also a deep understanding of, and the ability to manage, the unique characteristics and individuality of each member within the organization.

Self-awareness and self-regulation, both considered emotional intelligence attributes are identified as critical success factors for both leaders and followers (Goleman, et. al., 2002). Distinguishing between leader development and leadership development is a complex and nuanced matter. Ongoing debate persists in efforts to establish a clear differentiation between these two concepts (King & Nesbit, 2015). The most common themes are the differences between developing human capital (*leader* development) and social capital (*leadership* development). Developing human capital often emphasises the ability and capabilities of individuals (Day, 2000), and is closely related to self-awareness, self-regulation, and self-motivation – which he contends, are the foundations of intrapersonal competences. Scholars like Goleman (1995) identified that an emotionally intelligent leader is one who fosters self-awareness, self-management, social awareness, and relationship management. Nonetheless, numerous questions persist regarding why intelligent and experienced leaders may not always effectively perform, citing reasons including emotional intelligence, leadership style and organisational climate (Cavazotte et. al.,2011).

3. The Role of Leadership and Leadership Styles in Improving Mental Health (MH) and Resilience

Leadership literature reports numerous links between leadership, MH and employees. A meta-analysis by Stuber et.al. (2021) undertook a systematic search which produced over 11000 results on the topic. Leadership styles themselves are not inherently unethical or ethical; rather, it is how leadership styles are practiced and the values and principles that underlie them, that can influence whether unethical behaviour is promoted or discouraged within an organization. Different leadership styles can be applied in ways that either encourage ethical behaviour or create an environment conducive to unethical conduct (Goleman, 2000; Schein 2010).

Yukl & Gardner (2019) touched on some of the issues prevalent within leadership styles that are said to promote unethical behaviours by a leader. For example, exploitation of members of an organisation has a detrimental effect on its employees and predicts poor work-related health and quality of life. Authoritarian leadership, whilst evidencing some benefits, is largely decried in the literature due to the characteristic nature of a leader's control over decision-making and the communication style adopted, fails to recognise the impact over the other (Hackman & Johnson, 2009). When a leader uses their authority and power over others to engage in unethical behaviour, it mediates the quality of the organisational culture. Yukl & Gardner (2019) suggested that this sets a negative example for others to follow which globally, can have a negative impact on the organisation. This may

result in wide-ranging consequences, affecting both the organization's internal dynamics and its external reputation, creating a hostile and stressful environment for employees to work in (Bass & Riggio, 2006). According to Yukl & Gardner (2019), "Powerful leaders can have a substantial impact on the lives of followers and the fate of an organization" (p647).

The term 'leader idealised influence' previously reported on by Burns (1978), is reported as a psychological (largely unconscious) phenomenon which for example, may lead members to working longer, unnecessary hours. Bass's (1985) model of Transformational Leadership, is perhaps viewed as a more progressive leadership style, said to inspire loyalty and motivate followers to perform at higher levels. However, limitations of this approach were examined by Seltzer & Bass (1990), stating that it could become an unintended source of burnout for employees. In a similar vein, Rivkin et. al. (2014) reported that supporting wider group needs, might lead individual employees to avoid considering the importance of maintaining their own health and wellbeing. Therefore, it is vital that individuals in leadership roles recognise the significance of their actions, as effective leadership plays a pivotal role in addressing and alleviating organisational fragmentation (Schaedler et.al., 2022).

Research findings by Rivkin et. al. (2014) report on positive benefits of good leadership to influence both motivation and performance at work. On the other hand, organisational culture, individual motivation, morale and environment are important determinants of MH; with workload and both peer and leader support being key themes (Phillips et al., 2020). As the rationale for this paper is to generate interest in the topic of self-understanding in leadership, it will be pertinent to consider the hypothesis of whether the capacity of a leader to develop greater self-understanding, is indeed a predictor for improved organisational culture and employee wellbeing.

4. Intelligent Behaviour Analytics (IBA)

IBA is a multi-layered, unique framework to enhance self-understanding and provides a structure to develop leadership, emotional intelligence, and provides a coaching and mediation pathway for all levels of an organisation. It enables the analysis of human behaviour, emotional responses, verbal, and non-verbal communication and how people learn, developing probability in a range of situations. IBA explores the way in which people work with one another, manage their own behaviour, and relate more effectively to others.

IBA diverges from the idea that people should be grouped into patterns or types and is designed to help individuals understand and appreciate their uniqueness. In so doing, they acquire the confidence and insight to flex into the leadership style relevant to the situation before them. The six cumulative stages are designed to provide in-depth content that increases levels of self-understanding and has the potential to produce a narrative unique to everyone, effectively narrating an in-depth and individualised discussion about that individual.

The first stage is based on an ancient Indian proverb and is included in the book, *The Four Rooms* (Godden, 1989), where the axiom is described as,

"Everyone is a house with four rooms, a physical, a mental, an emotional and a spiritual. Most of us tend to live in one room most of the time but, unless we go into every room every day, even if only to keep it aired, we are not a complete person" (Godden, 1989).

The guiding process of IBA focuses on encouraging participants to inhabit each 'room' in balance. As the participant engages in the next five stages, they gain clarity with respect to how to navigate efficiently into each room. This stage aligns with the principles of Science, Technology, Engineering, Arts and Mathematics (STEAM) education, and reinforces the importance of including the Arts, thereby addressing the whole person, and prioritising a fundamentally holistic and collaborative approach. Similar in nature to Covey's *'Seven Habits of Highly Effective People'* (Covey, 1990), the 'Four Rooms' provide a handrail to an individual's understanding of their busy, connected, highly pressurised, daily lives.

The second stage is built from the instinctive responses of 'Fight, Flight, Freeze & Friend', conceptualised as '*the 4Fs*', which map and compliment an individual's behavioural needs, as described in stage three. It explains that whilst these are commonly understood as survival responses, their influence can be felt throughout an individual's daily interactions. Each of the 4F responses have specific positive outcomes, especially when an individual is experiencing challenging circumstances. Conversely, dependent upon the situation, each of the responses may lead to unwelcome and unhelpful outcomes especially if employed in a purely reactive and habitual manner. An individual will likely have one or two responses that are most prevalent and commonly felt. The IBA framework guides participants to understand how their instinctive 4Fs may change throughout the following three states of pressure:

- Rest and Relax State – a time of relaxation characterised by the absence of pressure or external control.
- Favourable Pressure State – when an individual experiences a motivating and/or inspiring spark. This state is characterised by a heightened awareness, efficacy, and energy. Being in control of their behaviours and outcomes.
- Unfavourable Pressure State – when challenges are stressful and possibly overwhelming. Whilst this state can be borne in the short term, if it persists it can adversely affect health and well-being in the longer term. Individuals rarely feel in control of the situation or outcomes.

The third stage concerns an individual's behavioural needs. In line with the IBA framework, conventional psychological literature indicates that emotion drives our actions and behaviour (Baumeister et. al., 2007). Similarly, Bariso (2018) sought to define emotional intelligence, as 'a person's ability to identify emotions (in both them and others), to recognize the powerful effects of those emotions, and to use that information to inform and guide behaviour'. The *behavioural needs* layer is academically underpinned by the work of Marston (1928), perhaps most famous for designing the world's first polygraph machine. More interested in behaviours of the general population rather than abnormal psychology, he discovered the correlation between lying and increased blood pressure. Marston further developed the work of Jung, who created a ground-breaking model for human behaviour in which, he recognised people can be divided into four main functions of consciousness: sensation, intuition, thinking and feeling (Jung, 1921).

Considering its application for organisation, early pilot studies are promising, and it is hypothesised that this level of self-understanding can improve leadership and influence organisational culture within their institution. IBA philosophy aligns with Goleman (1998), who proposed that, "exhibiting emotional intelligence at the workplace...means understanding your own and other people's emotional makeup well enough to move people in the direction of accomplishing your company's goals" (p93). IBA however goes much further than a proposition as it facilitates the practicalities of implementing the improvement which Goleman alludes to.

Marston's (1928) seminal book, *'Emotions of Normal People'*, theorised that normal human emotions lead to behavioural differences, and how a person's behaviour might change over time and focused directly on observable and measurable psychological phenomena. He was interested in using practical explanations to help people understand and manage their experiences and relationships. Marston proposed that the behavioural expression of emotions could be categorised into four primary types which he labelled as, 'Dominance (D), Inducement (I), Submission (S), and Compliance (C)'. Marston recognised, that whilst everyone may adopt one primary pattern, the behaviour types could blend into one another, and individuals were a 'blend of all four behaviours'.

Marston's research was however, never turned into an assessment measure. Some years later, Clarke (1956) became the first person to pioneer an assessment instrument using Marston's theories. The assessment, having been used by Clarke since 1948, was originally intended for personnel selection by businesses, the primary aim being to create a measurement tool that could be used to generate personality descriptions. The four factors in Clarke's data (aggressive, sociable, stable and avoidant), were based on Marston's model. In 1958, advancing Clarke's research, Hendrickson developed the Thomas Personal Profile Analysis as a self-report tool, which became the forerunner to the modern DISC profile (Thomas, 2023).

Whilst researchers propose that DISC accrues responses into fifteen fixed narratives or patterns of behaviour, IBA posits this does not sufficiently capture the nuances of human beings. In comparison, by adding subsets to the questionnaire design, the IBA framework captures additional nuances enabling higher levels of accuracy. IBA predicts that an individual's behaviour is related to, and a mix of, four specific psychic domains (mental constructs) like 'internal working model' theories posited by Piaget (1952) and Bowlby (1969). These domains are termed; harmony, immediate, careful, and optimistic – referred to as HICO within the IBA framework. Furthermore, this third stage draws upon Maslow's (1943) Hierarchy of Needs model; a theory of psychological health predicated on fulfilling innate human needs in priority, culminating in self-actualization. His work on motivation is entwined with Marston's and is embedded into the narrative outputs provided by the IBA framework.

5. Emotional Responses

Emotions play a central role as guides to behaviour and the maintenance of an integrated self (Damasio, 2006). Until recently, the role of emotions in the workplace has been underestimated and little academic commentary beyond job satisfaction (Cartwright & Pappas, 2008). Emotions surface in response to internal or external events,

typically experienced as positive or negative affect. Leeper (1948) suggested emotions are primarily poignant forces, 'processes which activate arousal, whilst sustain, and direct activity.' Emotions are generally recognised as an 'awakened reaction to circumstance or situations' (Ekman, 2007); 'play a part in shaping the way in which the mind interprets stimuli from the external world' (Payne, 2015); and 'virtually every emotion one might feel, will motivate us into action' claim Fisher & Shapiro (2005).

Fisher & Shapiro (2005) claimed that emotions are ever-present, and in collaboration with reason, influence how people evaluate and react to situations. Therefore, a discerning knowledge of our own and others' emotions are said to be vital to developing emotional intelligence, leadership, and leader development (Dalglish & Power, 1999; Momeni, 2009).

Debate exists in the literature regarding the amount and type of emotions albeit, consensus in agreement on six basic emotions; happiness, sadness, fear, disgust, anger and surprise (Ekman, 1992). Key to Ekman's contributions, is the conclusion that whilst many emotions are recognised cross culturally, Dalglish & Power (1999) assert basic emotions as having evolutionary roots and adaptive functions for survival. Goleman's (1995) model which includes eight basic emotions; anger, sadness, fear, enjoyment, love, surprise, disgust, and shame, argued that enjoyment, love, and shame be included within core emotion theories. Further research out of the University of Glasgow, by Jack et. al. (2014), employed complex computer modelling and reverse correlation techniques. Significantly, they identified that disgust/surprise, were 'social', rather than 'biological' conditions and concluded that there are only four basic emotions, given what certain cultures regard as disgusting/surprising, others may not.

Within the IBA framework, core descriptors for its four biological emotions draw upon the contributions from Jack et. al. (2014), and that of Albert Ellis, who founded Rational Emotive Behaviour Therapy (REBT). Ellis (1957) suggested that humans tend to disturb themselves through holding three core beliefs; demands on self, others and life, and the result of his work forms the individual narratives concerning the four biological emotions used in IBA which are experienced by all 8 billion people on earth (United Nations, 2022). IBA research hypothesises that one's strongest emotional responses are driven by threats to one's core HICO behavioural needs, or challenges to the needs of our top domains; said to elicit an emotional response that evokes predictable responses in line of the characteristics of whichever domain is threatened.

Better self-understanding, through knowing one's HICO needs, and one's 4Fs responses, provides the framework for understanding one's emotional response and instinctive reaction when these needs are challenged or threatened. IBA suggests that emotional responses vary depending upon an individual's most influential domain(s) of behaviour. Furthermore, this posits why people react differently to one another, even under similar circumstances. Knowledge and comprehension of these response within yourself (and others), is a fundamental skill necessary for development of emotional intelligence and leadership (Goleman, 1995). IBA suggests that whilst everyone experiences certain basic emotions, an individual's most influential behaviour domain(s) affects the extent certain emotions are experienced. In other words, depending upon which core needs are threatened/attacked; the range of emotions experienced; the intensity each are experienced and how one typically deals with different emotions, is very much determined by your personal HICO behavioural profile.

6. Interaction and Communication Preferences

An interactions element of IBA known as 'WORLDS' allows for a deeper insight into self-understanding and shows how these activities can have a mitigating effect and influence, upon behavioural needs and responses. The acronym stands for: 'Writing, Oral, Reading, Listening, Doing and Seeing'. In a similar vein to behavioural needs, one or more interaction preferences are likely to provide greater influence and be more commonly utilized, than others, depending upon the individual.

This element of the framework operates in three stages:

1. Inputs - WORLDS preferences used to receive information.
2. Process - WORLDS preferences used to process information about our environment and to clarify or develop thoughts, ideas, knowledge, and feelings.
3. Outputs - WORLDS preferences used to effectively take action, to express thoughts, ideas, knowledge, and feelings; information which may, or may not be subsequently shared with others.

Once the WORLDS preferences are interpolated with an individual's HICO scores, 4F reactions, and Emotional Responses; the IBA framework delivers in-depth narratives that significantly enhance user self-understanding.

The sixth and final stage goes one crucial step further. By drawing together all that has been covered in the first five stages and applying these observations to an individual's historical life events, it enables users to access a much clearer and fundamental understanding of how these events have impacted and shaped that individual.

7. Discussion

This paper proposes that employing IBA, will provide leaders with accurate data-driven information (their personal report), that can be practically applied, to improve self-understanding and those in their group. Furthermore, this self-understanding should increase a leader's ability to adapt to the dynamic contexts of the workplace. We argue that by integrating the IBA framework into a company's performance management system, leaders would be able to confidently transition between different leadership styles, ultimately optimising employee wellbeing and organisation output.

Once a leader has completed the six stages of the IBA framework, they will be able to understand which leadership style(s) they over/underuse and the most likely leadership style(s) used in *rest and relax*, *favourable* and *unfavourable* pressure states. Furthermore, as leaders become more proficient in assessing different scenarios, the needs and likely responses of their team members under favourable and unfavourable pressure, the probabilities of overcoming common workplace challenges increase significantly.

The IBA framework offers an innovative opportunity for leaders to deepen self-understanding and engage in critical self-reflection. Ultimately, controlling employees' behaviour is not under a leader's control, but deploying which leadership style is likely to get the most out of their employees, is. This is a fundamental reversal of historical and modern management theory. Contrary to previous popular belief, encouraging positive change in an organisation does not start with detecting maladjusted employees or weaponizing the results of personality tests, rather it acknowledges the shared responsibility leaders have. All employees should understand the self and direct viable insights in a positive, effectual way, absent of the personal or professional biases derived from a lack of self-understanding that may leak into existing performance management systems.

References

- Allport, G.W. (1937). *Personality: a psychological interpretation*. Holt.
- Avolio, B.J., Bass, B.M., & Jung, D.I. (1999). Re-examining the components of transformational and transactional leadership using the multifactor leadership. *Journal of Occupational and Organizational Psychology*, 72, 441–462.
- Bariso, J. (2018). *EQ applied: the real-world guide to emotional intelligence*. Borough Hall.
- Bass, B.M. (1985). *Leadership and performance beyond expectations*. The Free Press.
- Bass, B.M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18, 19–31.
- Bass, B.M. & Riggio, R. E. (2006). *Transformational Leadership* (2nd Ed.). Psychology Press.
- Baumeister, R.F., Schmeichel, B.J., & Vohs, K.D. (2007). Self-regulation and the executive function: The self as controlling agent. In *Social Psychology: Handbook of Basic Principles*, (2nd Ed). (pp. 516–539). The Guilford Press.
- Boisnier, A., & Chatman, J. A. (2003). The role of subcultures in agile organizations. In R. S. Peterson & E. A. Mannix (Eds.), *Leading and managing people in the dynamic organization* (pp. 87–112). Lawrence Erlbaum Associates Publishers.
- Bowlby, J. (1969). *Attachment and Loss: Vol. 1. Attachment*. Basic Books.
- Burns, J.M. (1978). *Leadership*. Harper & Row.
- Cartwright, S., & Pappas, C. (2008). Emotional intelligence, its measurement and implications for the workplace. *International Journal of Management Reviews*, 10, 149–171.
- Cavazotte, F., Moreno, V., & Hickmann, M. (2012). Effects of leader intelligence, personality and emotional intelligence on transformational leadership and managerial performance. *The Leadership Quarterly*, 23(3), 443–455.
- Chandler, N. (2020). Neo-Tribes or subcultures?: The nature of subcultures in large complex organizations. In *Recent Advances in the Roles of Cultural and Personal Values in Organizational Behaviour*. Nedelko, Z & Brzozowski, M. (eds). Business Science Reference.
- Clarke, W.V. (1956). The Construction of an Industrial Selection Personality Test. *The Journal of Psychology*, 41(2), 379–394.
- Chartered Management Institute. (2014). *Management 2020: Leadership to unlock long-term growth*. CMI.
- Chartered Management Institute. (2018). *Business productivity review: Call for evidence*. CMI.
- Covey, S.R. (1990). *The seven habits of highly effective people: restoring the character ethic*. Fireside Book.
- Dalgleish, T. & Power, M. (Eds.). (1999). *Handbook of cognition and emotion*. Wiley.
- Damasio, A. (2006). *Descartes' error: emotion, reason and the human brain*. Vintage.
- Day, D.V. (2000). Leadership development: A review in context. *The Leadership Quarterly*, 11(4), 581–613.
- Deal, T.E. & Kennedy, A.A. (1982). *Corporate cultures: The rites and rituals of corporate life*. Addison-Wesley.
- Duchenne, G. B. (1990). *The mechanism of human facial expression*. Cambridge University Press.
- Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, 6(3-4), 169–200.
- Ekman, P. (2007). The Directed Facial Action Task: Emotional responses without appraisal. In *Handbook of Emotion Elicitation and Assessment* (Series in Affective Science, pp. 47–53). Oxford University Press.

- Ellis, A. (1957). Rational Psychotherapy and Individual Psychology. *Journal of Individual Psychology*, 13(1), 38-44.
- Fisher, R., & Shapiro, D. (2005). *Beyond reason: using emotions as you negotiate*. The Penguin Group.
- Godden, R. (1992). *A House with Four Rooms*. Morrow.
- Goleman, D. (1995). *Emotional Intelligence*. Bantam Books.
- Goleman, D. (1998). What makes a leader?. *Harvard business review*, 76(6), 93–102.
- Goleman, D. (2000). Leadership that gets results. *Harvard Business Review*, 78, 78-90.
- Goleman, D., Boyatzis, R., & McKee, A. (2002). *The New Leaders: Transforming the Art of Leadership*. Sphere.
- Hackman, M.Z., & Johnson, C.E. (2009). *Leadership: A communication perspective* (5th Ed.). Waveland Press.
- Hawkins, P. (1997). Book Review: *Organizational Culture: Sailing Between Evangelism and Complexity*. *Human Relations*, 50(4), 417–440.
- History of DiSC. (2023). Decades of research and real-world applications. <https://www.discprofile.com/what-is-disc/history-of-disc/> [last accessed 18/09/23].
- Jack, R.E., Garrod, O.G.B. & Schyns, P.G. (2014). Dynamic facial expressions of emotion transmit an evolving hierarchy of signals over time. *Current Biology*, 24, 187–192.
- Jung, C.G. (1921). *Psychological Types*. The Collected Works of C.G. Jung, Vol. 6, Bollingen Series XX.
- King, E. & Nesbit, P. (2015). Collusion with denial: Leadership development and its evaluation. *Journal of Management Development*, 34, 134–152.
- Kislik, L. (2022). What Do Newer Generations of Employees Want, And Can Your Business Adjust? *Forbes*. <https://www.forbes.com/sites/lizkislik/2022/01/28/what-do-newer-generations-of-employees-want-and-can-your-business-adjust/> [last accessed 18/09/23].
- Lazazzara, A. (2016). Rethinking Organizational Culture: The Role of Generational Subcultures. In Panebianco, F., Serrelli, E. (eds). *Understanding cultural traits multidisciplinary perspective on cultural diversity*. Springer.
- Leeper, R.W. (1948). A motivational theory of emotion to replace “emotion as disorganized response.” *Psychological Review*, 55, 5–21.
- Maslow, A.H. (1943). A Theory of Human Motivation. *Psychological Review*, 50(4), 370-396.
- Mannion, R., Konteh, F.H., & Davies, H.T.O. (2009). Assessing organisational culture for quality and safety improvement: A national survey of tools and tool use. *Quality & Safety in Health Care*, 18, 153–156.
- Momeni, N. (2009). The Relation Between Managers’ Emotional Intelligence and the Organizational Climate They Create. *Public Personnel Management*, 38, 35–48.
- Marston, W.M. (1928). *Emotions Of Normal People* (1st Ed.). Routledge.
- Northouse, P.G. (2016). *Leadership: Theory and practice* (7th Ed.). Sage.
- Ogbonna, E., & Harris, L.C. (2002). The performance implications of management fads and fashions: An empirical study. *Journal of Strategic Marketing*, 10(1), 47-68.
- Ouchi, W.G. (1981). *Theory Z: How American business can meet the Japanese challenge*. Addison-Wesley.
- Payne, R. (2015). Using rewards and sanctions in the classroom: pupils’ perceptions of their own responses to current behaviour management strategies. *Educational Review*, 67, 483–504.
- Peters, T.J., & Waterman, R.H. (1982). *In search of excellence: Lessons from America’s best-run companies*. Harper & Row.
- Phillips, D., Marcinkiewicz, A., Wishart, R., Forsyth, E., Nguyen, A...and Denney, D. (2020). The mental health needs of serving and ex-Service personnel: A systematic review. *NatCen Social Research*.
- Piaget, J. (1952). *The Origins of Intelligence in Children*. Norton.
- Rivkin, W., Diestel, S. & Schmidt, K.H. (2014). The positive relationship between servant leadership and employees’ psychological health: A multi-method approach. *German Journal of Human Resource Management*, 28, 52–72.
- Schaeidler L., Graf-Vlachy L., & König A. (2022). Strategic leadership in organizational crises: A review and research agenda. *Long Range Planning*, 55:102156.
- Schein, E.H. (1992). *Organizational culture and leadership* (2nd Ed.). Jossey-Bass.
- Schein, E.H. (2010). *Organizational culture and leadership* (4th Ed.). Jossey-Bass.
- Seltzer, J. & Bass, B.M. (1990). Transformational Leadership: Beyond Initiation and Consideration. *Journal of Management*, 16, 693-703.
- Stuber, F., Seifried-Dübon, T., Rieger, M.A., Gündel, H., Ruhle, S., Zipfel, S., & Junne, F. (2021). The effectiveness of health-oriented leadership interventions for the improvement of mental health of employees in the health care sector: A systematic review. *International Archives of Occupational and Environmental Health*, 94(2), 203-220.
- Thomas. (2023). How the Thomas DISC test works. <https://www.thomas.co/assessments/DISC-test> [last accessed 18/09/23].
- United Nations (2022). Population. <https://www.un.org/en/global-issues/population> ([last accessed 14/09/23].
- Yukl, G.A. & Gardner, W. (2019). *Leadership in organization*. (9th Ed.). Pearson Education Limited.

Assessing the State of Corporate Digital Transformation: Results and Implications From a Global Survey

Florian Kidschun, Felix Budde and Alida Soar Gomes

Fraunhofer Institute for Production Systems and Design Technology IPK, Berlin, Germany

florian.kidschun@ipk.fraunhofer.de

felix.budde@ipk.fraunhofer.de

alida.soar.gomes@ipk.fraunhofer.de

Abstract: Digitalization has a significant impact on value-creating organizations of all sectors. New business models and processes are becoming established, the development of products and services is changing as well as the interaction with customers, partners and suppliers. As these changes create new requirements for companies, they need to reorient and adapt to them. To structure the topic of corporate digital transformation with its many individual elements, which can either be digitized and networked/integrated or create the conditions for the digital transformation of further elements, a reference framework has been developed that covers the essential value creation elements of a company in the context of digital transformation. Based on this framework, a self-assessment tool ('Digital Transformation Assessment (DTA)') was developed to carry out a survey on the current status of corporate digital transformation globally. This contribution outlines the key analysis results, through an applied and observational research, within the timeframe from 2020 to 2023, based on a quanti-qualitative analysis of answers from over 880 companies worldwide. The paper contributes to the literature on digital transformation by verifying through the analysis of the results that effective digital transformation requires not only investments in technology, but also a holistic approach that encompasses organizational, cultural, and strategic changes. Therefore, the role of leaders and the creation of a digital transformation-oriented corporate culture are keys to driving success in this process.

Keywords: Digital Transformation, Self-assessment, Survey, Model

1. Introduction

Digital transformation is a process of change (Ismail et al. 2018) that companies need to engage in to master digitization. It is driven by the adoption of new information and communication technologies, however goes beyond automation. It offers benefits and opportunities, but also present significant challenges for organizations. It has strong effects on the business environment, driving rapid change, volatility, uncertainty and complexity. Thus, the responsiveness and adaptability of organizations becomes crucial to maintaining their long-term competitiveness (Westerman et al. 2011). Therefore, it is necessary for organizations to systematically assess their progress in digital transformation and establish effective pathways by defining action items, setting priorities, and developing a strategic vision for the digital age (Back and Berghaus 2016).

This digital transformation strategy should be approached holistically, involving multiple stakeholders and embracing different domains of the organization, through an oriented corporate culture, encouraged by its leadership. This ensures a shared understanding of the areas to be addressed and enables proper prioritization of digital transformation initiatives. For this, it is essential to have a comprehensive understanding of the factors and obstacles affecting the process.

These factors can be classified as internal and external. Internal drivers are related to the organizational level and are reflected in revenue reduction, financial pressure on the core business, social and economic benefits for stakeholders, efficiency and productivity gains, innovation, and differentiation from competitors. While, external drivers are influenced by the socioeconomic environment and include emerging technologies such as mobility, Internet of Things (IoT), data analytics and big data, cloud computing, as well as customer expectations, globalization with a focus on digital competition, and innovative startups (Ismail et al. 2017).

As a consequence in the business environment, organizations are required to systematically assess the progress of their digital transformation and establish effective paths to achieve the desired levels of digital maturity (Westerman et al. 2011). In the literature digital transformation has also been receiving attention (acatech 2013; Bockschecker et al. 2018; Freitas Junior et al. 2016; Jackson 2015), and yet it is important to note that there is no one-size-fits-all approach to digital transformation. The specific steps that organizations need to take to digitally transform will vary depending on their business context.

This paper aims to perform a data analysis on the global state of digital transformation in order to identify significant queries related to the digital transformation process.

2. Methodology

Digital Transformation Assessment analysis is based on a quanti-qualitative framework and has been conducted as an applied and observational research—since June 2020. Even though the survey framework has been previously developed, it is important to clarify its construction, since the data is the result of the same research. In order to create the questionnaires' statements a process following an exploratory approach was conducted. This involved a model selection (1), model analysis (2), model creation (3), Questionnaire Development and Online Self-Assessment Tool development (4).

The first three steps (1-3) resulted in a model creation, which covered seven relevant dimensions (see The step (4) combined the aforementioned model into a practical form: a usable tool, by means of a standardized questionnaire, which allowed for the online assessment of the status quo of the digital transformation of organizations. For this purpose, design aspects were taken into consideration, as well as the form and scope of the questions, the order of presentation and their content, and the wording of the questions, also called statements.

Table 1) that contribute to the fundamental and holistic understanding of an organization and its development in the context of digital transformation, based on relevant models from the fields of "Organizational Development", "Digital Transformation" and "Industry 4.0".

The step (4) combined the aforementioned model into a practical form: a usable tool, by means of a standardized questionnaire, which allowed for the online assessment of the status quo of the digital transformation of organizations. For this purpose, design aspects were taken into consideration, as well as the form and scope of the questions, the order of presentation and their content, and the wording of the questions, also called statements.

Table 1: Dimensions and items of the Digital Transformation Assessment (DTA) questionnaire

Dimension	Items purpose	No. items
Corporate Strategy	It analyzes digitalization as an integral part of business strategy, as well as defined roles and responsibilities, measurable objectives, and monitoring of digital transformation in the company.	4 (status quo) + 2 (relevance)
Leadership & Corporate Culture	A review of top and middle management commitment, employee openness to digital change, participatory culture, and internal communication for the company's digital transformation.	5 (status quo) + 2 (relevance)
Organization & Processes	It evaluates the use of innovative forms of work, of interdisciplinary cooperation, process analyses and continuous improvement through the use of digital technologies and digital process models.	4 (status quo) + 2 (relevance)
Employees & Competences	This dimension assesses professional, socio-communicative, and personal skills of employees, systematic evaluation of skills, training in digitalization, and use of digital technologies in human resource management.	6 (status quo) + 2 (relevance)
Technology	Network of digital technology investments is evaluated, as well as IT infrastructure upgrades, IT security rules and standards, data integration, the use of business collaboration technologies, and its investments.	5 (status quo) + 2 (relevance)
Products & Services	Regular analysis of market potentials for further development of the business model, analysis of usage data, stakeholder integration for product and service development, diversification of the own portfolio through digital product and service innovations.	4 (status quo) + 2 (relevance)
Supply Chain & Networks	Customer management and digital customer interfaces, supplier management and digital supplier interfaces, and maintaining a network of digitization experts are analyzed.	5 (status quo) + 2 (relevance)

The digital transformation performance is assessed in three types of values: status quo, relevance today and relevance in the future. Regarding the status quo of each dimension, participants were asked to select their agreement with the 33 evaluation items (see Table 1 to correlate the number of statements to each dimension. Note they are in the order they appear in the survey). For each item, one could choose on a scale between "Strongly agree" (5) to "Strongly disagree" (1). In advance, the results of these are offering the actual state of each question, in a micro level, and each dimension, in a macro level, when adding all the questions related to one field together. Each dimension was rated in terms of their current relevance on a scale from 1 (not important) to 10 (most important). The relevance in the future concerns the participant's view on how the relevance of the dimension would change in the next 5 years against the background of the advancing digitalization, following a scale between -2 (will decrease strongly) to 2 (will increase strongly).

There was also a concern to collect the demographic and structural data that allow in-depth comparisons with relevant peer groups. The following structural data is collected for the purposes of this study: Company data: (i) location (by country), (ii) industry sector (by NACE code), (iii) annual revenue, (iv) number of employees, (v) age of organization, (vi) type of products (e.g., customized, standard products), (vii) main target markets (e.g., B2B, B2C). And respondent data: (i) job title, (ii) department/function, (iii) age of the person.

The data is first on a global level regarding dimensions status quo, in addition to its relevance today and in the future. Moreover, the top 25% average performances responses are put into comparison with the better and worst statements against the general performances' statements. In a further analysis the status quo of the results of the different regions were analyzed, followed by the industry sectors, the size of the companies, and the management level.

3. Data Sample

Over a timespan of almost 3 years from June 2020 - June 2023, the survey gathered 881 responses from 72 different countries and 20 different industry sections.

Figure 1 displays the distribution of participating companies by the companies' location, industry sections, size of the company and participant's management level. Regarding regional representation, Europe had the highest number of responses at 48% with the majority of answers coming from Germany, Lithuania and Ireland (Republic). 32% of responses come from Asia, led by India, Singapore and Malaysia. The American continent represented 16% of responses, mostly coming from the United States and Brazil. Finally, a small but existent participation can be found in Africa and Oceania, where both represent around 2% of all answers.

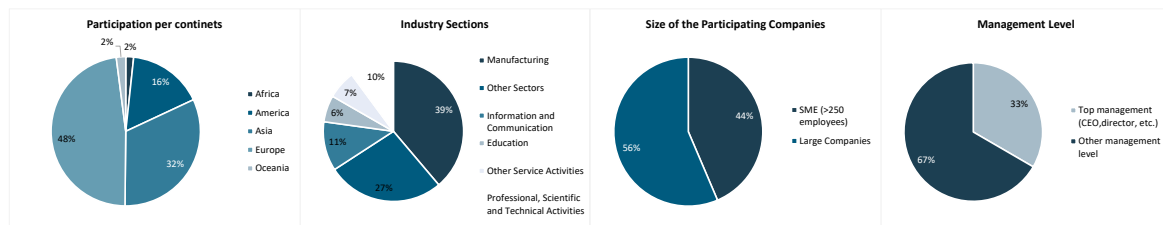


Figure 1: Classification of answers by continents, industry sections, size of company and management level

Regarding industry sections, between over 620 different companies and 20 different sectors, the manufacturing sector leads the highest participation with 40% of all responses while IC represents 11%. Other sectors account for 49%.

Just under half of answers come from Small and Medium Enterprises (SMEs) with less than 250 employees while 56% come from large companies. As for the management level, 33% came from participants in top management (CEO, director, etc.) while 67% belong to other levels of management, such as middle management (head of department etc.), lower management (project manager, team leader etc.) and those employees without management tasks (shop floor employees, skilled workers, etc.).

4. Data Analysis

In this section, the survey results are analyzed in five sub-sections regarding the overall results and the filtered responses from continents, industry section, size of companies, and management level.

4.1 Overall Results

The global analysis of the status quo in the seven dimensions in terms of digital transformation show that Technology is assessed as most developed by the respondents with an average score of 3.41 out of 5, followed by Leadership & Corporate Culture. Most participants further agree that dimensions of Supply Chain & Networks, as well as Employees & Competences, perform poorly. The overall average score for all seven dimensions is 3.18. Find below (Figure 2) the averages for each dimension.

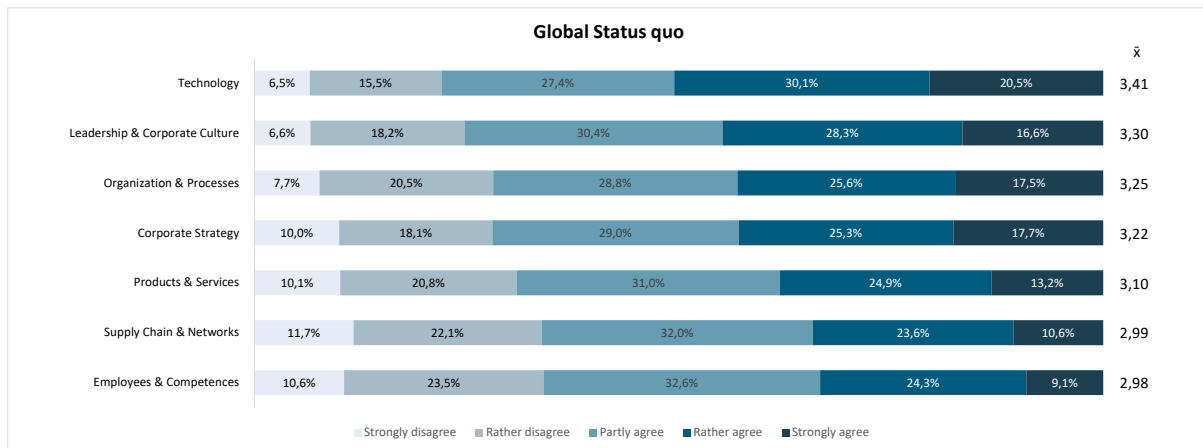


Figure 2: Global Status quo

Concerning relevancies today and in the next five years: companies also reported the two dimensions Technology, and Leadership & Corporate Culture as more relevant than the other dimensions. Among the participants, Employees & Competences are considered average in terms of current relevance. Technology and Organizations & Processes are expected to gain more relevance in the future. Conversely, Supply Chain & Networks, as well as Products & Services, are projected to become less relevant compared to other dimensions. Employees & Competences maintain moderate relevance in the participants' perceptions for the next five years.

Careful consideration was given to the performance not only of the dimensions as a whole, but also of each individual statement, in order to prevent them from being obscured by the aggregated averages. To this end, a strategy was adopted of comparing the five best and five worst assessment items, both at an overall level and among the top 25% of averages (see Table 2 and Table 3). This approach allowed a more precise analysis of dimensions status quo, identifying strengths and weaknesses in a more focused way.

The first quartile consists of 220 responses from 174 different companies, with 56% from Europe, 32% from Asia and 10% from America. Nearly 40% are from the manufacturing sectors and 20% from the IC sector, while the rest is dispersed among the other sections. 57% are large companies and the remaining 43% are SMEs. Among the respondents, 34% are from top management (CEO, director, etc.) and the other 66% are from other management levels.

Table 2: Status quo statements with the most and least global agreement

Global	Dimension	Question no.	Statement	Average
best performances	Technology	Q022	Our company has the necessary standards and regulations for IT security.	3,82
	Leadership & Corporate Culture	Q005	The top management is actively driving the digital transformation in our company.	3,76
	Organization & Processes	Q010	In our company, we make extensive use of the flexibility of new forms of work and organization made possible by digital technologies.	3,71
	Corporate Strategy	Q001	Digitalization is a central component of our corporate strategy.	3,68
	Leadership & Corporate Culture	Q006	The middle management actively supports the change processes that are necessary for the success of the digital transformation.	3,46
worst performances	Corporate Strategy	Q004	The degree to which our activities in connection with the digital transformation have achieved their objectives is regularly reviewed.	2,93
	Supply Chain & Networks	Q033	We use the regular exchange with external experts and partners to develop additional knowledge in the field of digitalization.	2,92
	Supply Chain & Networks	Q031	For our supplier management, we make extensive use of digital software solutions.	2,87

Global	Dimension	Question no.	Statement	Average
	Supply Chain & Networks	Q032	Our company comprehensively optimizes the digital interfaces to its suppliers.	2,77
	Employees & Competences	Q017	We regularly evaluate the status of the digital competencies of our employees in order to be able to react to the changed requirements through digitalization.	2,56

Table 3: Status quo statements with the highest and lowest agreement of the top 25% answers

Top 25%	Dimension	Question no.	Statement	Average
best performances	Corporate Strategy	Q001	Digitalization is a central component of our corporate strategy.	4,61
	Leadership & Corporate Culture	Q005	The top management is actively driving the digital transformation in our company.	4,61
	Technology	Q022	Our company has the necessary standards and regulations for IT security.	4,55
	Organization & Processes	Q010	In our company, we make extensive use of the flexibility of new forms of work and organization made possible by digital technologies.	4,47
	Technology	Q020	We invest long-term in new digital solutions to systematically improve existing technologies in the company.	4,36
worst performances	Employees & Competences	Q016	The personal skills of our employees are sufficiently well developed to successfully master the challenges of digitalization.	3,94
	Employees & Competences	Q014	The professional and methodical competencies of our employees are sufficiently well developed to successfully master the challenges of digitalization.	3,92
	Supply Chain & Networks	Q031	For our supplier management, we make extensive use of digital software solutions.	3,88
	Supply Chain & Networks	Q032	Our company comprehensively optimizes the digital interfaces to its suppliers.	3,76
	Employees & Competences	Q017	We regularly evaluate the status of the digital competencies of our employees in order to be able to react to the changed requirements through digitalization.	3,52

4.2 Regional Differences

The results have been classified according to the continent in which the companies are placed. Table 4 shows the status quo for each continent.

Europe, Asia, and Africa outperform the global data averages in terms of digital transformation. Europe, Asia and Africa seem to be more advanced in the digital transformation, when compared to the global data averages. In case of Europe, the continent emerges as the leading region in both research participation and digital transformation performance, standing out particularly in the Technology dimension, while Supply Chain & Networks was the worst performing dimension. These results can also be found for Asia as the second-best performing continent. Participants from Africa assessed the best performance in Products & Services and Supply Chain & Networks as the worst. In America, Technology was rated best and the Employees & Competences least developed. In the case of Oceania, the dimension of Corporate Strategy was considered the one with best performance, while the least developed was Products & Services.

Table 4: Continents' status quo

Continents' status quo					
Europe	Asia	Africa	Global	America	Oceania
3,24	3,19	3,19	3,18	3,01	2,93

4.3 Differences by Industry Sections

When examining the data across different industrial sectors, two sectors, Manufacturing and Information and Communication, were chosen for analysis due to their substantial representation in the database, accounting for half of the data sample. The remaining sectors were grouped together as "others".

Across all sectors, Technology demonstrates the highest performance, while Employees & Competences exhibit the lowest performance. Moreover, in terms of overall performance, the IC sector outperforms the manufacturing sector, followed by the aggregate performance of the other sectors.

Table 5: Industry Section status quo

Manufacturing	Dimension	Average
	Technology	3,39
	Leadership & Corporate Culture	3,33
	Organization & Processes	3,29
	Corporate Strategy	3,21
	Products & Services	3,04
	Employees & Competences	2,92
	Supply Chain & Networks	2,91
	Total Average	3,16
Information and Communication	Dimension	Average
	Technology	3,77
	Products & Services	3,51
	Leadership & Corporate Culture	3,51
	Organization & Processes	3,50
	Corporate Strategy	3,45
	Supply Chain & Networks	3,34
	Employees & Competences	3,31
	Total Average	3,49
Other sectors	Dimension	Average
	Technology	3,37
	Leadership & Corporate Culture	3,22
	Corporate Strategy	3,19
	Organization & Processes	3,15
	Products & Services	3,05
	Supply Chain & Networks	2,97
	Employees & Competences	2,95
	Total Average	3,13

The detailed analysis of the companies' statements for Technology allows a deeper look into the best performing dimension, see Figure 3. As the average results suggest, larger differences in the assessment of the individual statements come to light too.

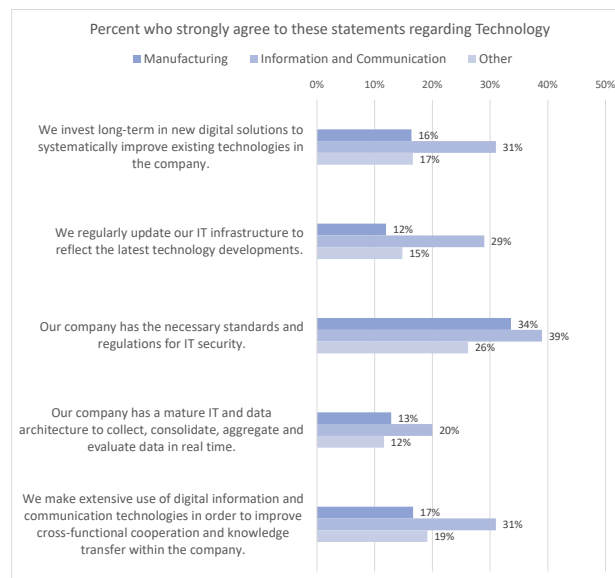


Figure 3: Agreement with Technology statements by industry section

IC companies also make most extensive use of the flexibility of new forms of work and organization made possible by digital technology (46% IC / 28% Manufacturing). It is apparent that a great amount of companies strongly agrees to have the necessary standards and regulation for IT security independently of industry section. One thirds of the enterprises from the Information and Communication industry section gives strong agreement to each investing long-term in new digital solutions to systematically improve existing technologies in the

company, regularly updating their IT infrastructure and making extensive use of digital information and communication technologies.

39% of IC firms agree that senior management is actively driving digital transformation in their company, with good support from employees who are actively and comprehensively involved in the ongoing process of shaping digital transformation. This is being especially supported in IC firms with more targeted communication of activities towards the digital transformation of the company. This is thus related to the better performance of companies in the IC sector, than the others.

4.4 Differences in Company Sizes

The data sample is split into 56% large companies and 44% SMEs. SMEs perform best in Leadership and Corporate Culture, while respondents in larger companies rated Technology highly. However, both SMEs and large companies identified Supply Chain & Networks, as well as Employees & Competences, as their lowest performing dimensions in digital transformation. Larger companies had higher average dimensions compared to SMEs.

Table 6: Status quo by size of companies

Larger Companies	Dimension	Average
	Technology	3,51
	Leadership and Corporate Culture	3,28
	Organization and Processes	3,26
	Corporate Strategy	3,26
	Products and Services	3,15
	Supply Chain and Networks	3,06
	Employees and Competences	2,96
	Total Average	3,21
SME	Dimension	Average
	Leadership and Corporate Culture	3,32
	Technology	3,32
	Organization and Processes	3,23
	Corporate Strategy	3,18
	Products and Services	3,04
	Employees and Competences	3,00
	Supply Chain and Networks	2,90
	Total Average	3,14

In addition, the data has pointed out that larger companies have better developed frameworks of necessary regulations and standards for IT security, invest long-term more often in new digital solutions to systematically improve existing technologies in the company and agree more to regularly update their IT infrastructure to reflect the latest technology developments.

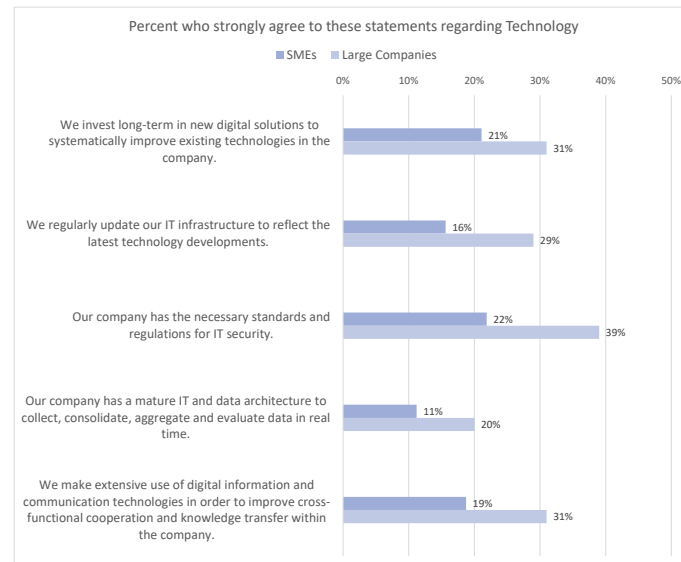


Figure 4: Agreement with Technology statements by company size

4.5 Differences in Management Level

When analyzing the data by management level, about 33% of the respondents are from the top management level, while 67% belong to lower levels of management.

Perceptions of participants from the top management tend to be more pessimistic about their company. For all management levels technology is the best evaluated dimension. For participants from top management Supply Chain & Networks was considered the one with the lowest performing dimension, while, for the other levels, Employees & Competences.

Table 7: Management Level Status quo

Top Management	Dimension	Average
	Technology	3,41
	Leadership and Corporate Culture	3,34
	Organization and Processes	3,25
	Corporate Strategy	3,24
	Products and Services	3,06
	Employees and Competences	2,95
	Supply Chain and Networks	2,89
	Total Average	3,16
Other levels	Dimension	Average
	Technology	3,43
	Leadership and Corporate Culture	3,28
	Organization and Processes	3,24
	Corporate Strategy	3,22
	Products and Services	3,12
	Supply Chain and Networks	3,04
	Employees and Competences	2,99
	Total Average	3,19

5. Discussion

The survey data analyzed indicate that the dimensions are in a developing state of status quo. Among the participants, the Technology dimension is widely regarded as the best performing in terms of digital transformation, followed by Leadership & Corporate Culture.

On the top performers' side, regarding the Technology dimension, it is logical that participants evaluated it favorably, considering that digital transformation is closely linked to the adoption and utilization of advanced technologies. However, it is important to question whether this assessment may be biased, despite efforts to ensure impartiality and obtain a comprehensive understanding of digital transformation through the evaluation of other dimensions.

The finding that Leadership & Corporate Culture is highly valued indicates a potential trend towards fostering a corporate culture focused on digital transformation. This highlights the influence of leadership at various organizational levels. Yet, it is worth noting that the Employees & Competences dimension was rated as the lowest performing. This may suggest communication challenges, inadequate preparation or even a pessimistic perspective where other dimensions are considered better than the actual work or activities. This situation can get even worse, as the data reveals that most companies do not consider this dimension highly relevant.

Simultaneously, both top management and other levels ranked Leadership & Corporate Culture as the second most important dimension, second only to Technology. On the other hand, other levels, rated Employees & Competences as the least developed dimension. Conversely, when the same question was posed to top management, they acknowledged the dimension's developmental need, yet did not perceive it as the worst. This supports the theory that a digital transformation-oriented corporate culture, established by leadership, exists.

Therefore, on the side of worst performances, the participants widely agreed that the Employees & Competences dimension exhibited the lowest performance in terms of digital transformation, closely followed by the Supply Chain and Networks dimension. This pattern was observed consistently across various perspectives. The lower performance in Supply Chain & Networks can be attributed to its perceived lack of current relevance and its expected maintenance for the future. The data indicates a significantly lower average score for this dimension, with an average of 2.99, compared to the overall average of 3.18 for all seven dimensions.

This result is nevertheless a matter of concern, considering that most of the participating companies are in the manufacturing sector. Efficient supply chain management and networks are crucial for operations in the manufacturing sector as manufacturing activities involve the transformation of materials. Additionally, Al-Shboul et al. (2017) emphasizes that effective supply chain management practices have a positive impact on supply chain performance, thereby contributing to the overall performance of firms in the manufacturing sector. In the current business scenario, supply chain management has become a crucial strategy to increase profitability and maintain the competitiveness of companies.

That said, when comparing the manufacturing sector with the information and communication sector, it is possible to observe a more advanced performance in terms of digital transformation of the latter sector. This disparity can be attributed to the inherently technological nature of activities in the information and communication sector. In contrast, the manufacturing sector faces challenges in adopting new technologies, often due to the presence of repetitive or manual processes (Vogelsang et al. 2019). The physical nature of production and the complexity of manufacturing processes can hinder the immediate and complete implementation of digital transformation in this sector.

To facilitate effective digital transformation in the manufacturing industry, specific challenges must be addressed. These include modernizing production systems, incorporating advanced technologies, enhancing equipment connectivity, and equipping employees with the necessary skills for process digitization. Vogelsang et al. (2019) classifies these factors as "Major barriers to DT" in the manufacturing sector, encompassing missing skills, technical barriers, individual barriers, organizational and cultural barriers, and environmental barriers.

Additionally, the data reveal that the dimensions with the lowest performance in the manufacturing sector (Supply Chain and Networks, Employees and Competences, and Products and Services) exhibit lower averages compared to the three worst-performing dimensions in other sectors. Nevertheless, the sector's strong performances in other dimensions compensate for these lower values, securing a second-place ranking in terms of status quo among the applied filters. Here, note that beyond the information and communication and manufacturing sectors, other industries may be at varying stages of development in their digital transformation journeys. These industries may encounter different needs and challenges, which can impact their capacity to adopt and implement digital transformation practices comprehensively.

When comparing the performance of companies of different sizes in this research, one observes that large companies presented superior results in relation to the SMEs evaluated. This discrepancy may be related to the fact that "SMEs are typically at a disadvantage with respect to large firms when accessing finance, owing to opacity, under-collateralization, high transaction costs and lack of financial skills" (OECD 2022, p. 2) facing challenges and limitations also in terms of digital transformation, while larger companies usually have a more robust structure and more abundant financial resources to drive in.

While in large companies the Technology dimension was evaluated as the best performing, in SMEs the first place was attributed to the Leadership and Corporate Culture dimension. This can be interpreted in two ways. First, the status quo of the large companies corroborates the theory that they perform better due to their more robust infrastructure, which is evidenced by the high level of digital transformation attributed to this dimension (with an average of 3.51 on a scale of 5), significantly higher than the overall average (3.21), indicating a lean and thriving organizational structure. Second, it is possible to consider that the Leadership and Corporate Culture dimension is seen as having a higher status quo in SMEs due to the characteristic corporate structure of these companies. In these smaller organizations, hierarchical relationships are closer and employees generally have a more horizontal structure, a view corroborated by Schein (2017), who explains that there is an inverse relationship between the team's direct and fluid communication and growth of companies. Thus, in SMEs, employees receive more easily the messages transmitted by leaders, which may contribute to a better assessment of this dimension in this case.

Back in the broader context, it was found that the European continent showed a more advanced level of digital transformation compared to the other continents, followed by Asia. Importantly, these continents also contributed the highest proportion of survey participation. Although it is possible to hypothesize a bias due to this unequal distribution, this fact proves to be significant, as it correlates with the results obtained from the top quartile answers mentioned before. Once, approximately 56% of the participants in this quartile were from the European continent, while about 32% were from Asia.

It was also possible to compare the general results with the quartile (25%) of best performance among the respondents. It was observed that technology is still considered the most developed dimension. However, a special feature of this comparison should be highlighted: while, in general, the best evaluated statement was "Our company has the necessary standards and regulations for IT security ", in the top 25% companies there is a special attention to Corporate Strategy and Leadership & Corporate Culture. When analyzing the statements separately, the top two were "Digitalization is a central component of our corporate strategy." and "The top management is actively driving the digital transformation in our company." which may indicate that the best-developed companies are linked to a management that is oriented and active toward digital transformation.

6. Conclusion

Digital transformation encompasses a comprehensive change in companies' operational strategies, enabling them to adapt to an intensely competitive business landscape. By analyzing the mentioned points, one can come to some important conclusions on the topic of digital transformation in enterprises. First, it is clear that many companies tend to focus only on the "digital" part of the transformation, neglecting the dimension of the word "transformation" itself. This reinforces the importance of adopting a systemic and comprehensive perspective on digital transformation, considering not only the technologies used, but also the organizational and cultural changes required. Afterall, transformation stands for altering traditional ways of doing business through the redefinition of business processes and relationships environment (Vogelsang et al. 2019)). However, it is valid to reinforce the power of the Technology dimension, as it is essential to have knowledge of it to take advantage of the opportunities it provides, as transformation does not occur without individuals capable of dealing with technologies (Ghezzi et al. 2022)

Second, companies that demonstrate a deeper understanding of digital transformation, valuing both the technology and the organizational transformations, tend to outperform in this process. This quality is shared both by employees, who play a key role in implementing the changes, and by corporate leaders, who have a direct influence on the strategic direction of the company. Endorsing the concept already presented in the literature that "successful DT does not happen bottom up. It must be driven from the top" (Westerman. et al. 2011, p. 5)

Finally, it is clear that the presence of strong leadership and a digital transformation-oriented corporate culture are key factors for success in this context. The creation of corporate strategies aligned to digital transformation is key for the company to stand out in this constantly evolving field, in agreement with Peter Drucker, who states, when saying "Culture Eats Strategy for Breakfast" that the organizational culture can determine a company's destination in the digital transformation journey. Afterall, "considering that the dynamics of the DT process are based on an organization's ability to establish appropriate routines to operate digitally, it strongly relates to organizational culture" (Ghezzi et al. 2022, pp. 4).

Therefore, one can conclude that effective digital transformation requires not only investments in technology, but also a holistic approach that encompasses organizational, cultural, and strategic changes. The role of leaders and the creation of a digital transformation-oriented corporate culture are key to driving success in this process.

References

- acatech (2013). Recommendations for implementing the strategic initiative INDUSTRIE 4.0. Final report of the Industrie 4.0 Working Group. Securing the future of German manufacturing industry. Forschungsunion. Available online at <https://www.acatech.de/publikation/umsetzungsempfehlungen-fuer-das-zukunftsprojekt-industrie-4-0-abschlussbericht-des-arbeitskreises-industrie-4-0/>.
- Al-Shboul, MAR/Barber, Kevin D./Garza-Reyes, Jose Arturo/Kumar, Vikas/Abdi, M. Reza (2017). The effect of supply chain management practices on supply chain and manufacturing firms' performance. *Journal of Manufacturing Technology Management* 28 (5), 577–609. <https://doi.org/10.1108/JMTM-11-2016-0154>.
- Back, Andrea/Berghaus, Sabine. Digital Maturity & Transformation Studie: Über das Digital Maturity Model. Available online at https://iwi.unisg.ch/wp-content/uploads/digitalmaturitymodel_download_v2.0-1.pdf.
- Bley, Katja/Leyh, Christian/Schäffer, Thomas (2016). Digitization of German Enterprises in the Production Sector – Do they know how "digitized" they are?
- Bockschecker, Alina/Hackstein, Sarah/Baumöl, Ulrike. Systematization of the term digital transformation and its phenomena from a socio-technical perspective – A literature review 2018. Available online at https://aisel.aisnet.org/ecis2018_rp/43/.
- Fichman, Robert G./Dos Santos, Brian L./Zheng, Zhiqiang (Eric) (2014)). Digital Innovation as a Fundamental and Powerful Concept in the Information Systems Curriculum. *MIS Quarterly* Vol. 38 No. 2, pp. 329-354, A1-A15 (41 pages). Available online at <https://www.jstor.org/stable/26634929>.
- Fontenelles, Mauro José/Simões, Marilda Garcia/Farias, Samantha Hasegawa/Fontenelles, Renata Garcia Simões (2009). Scientific Research Methodology: Guidelines for Elaboration of a Research Protocol. *Revista paraense de medicina* 23 (3), 1–8.
- Freitas Junior, José Carlos da Silva/Maçada, Antonio Carlos Gastaud/Brinkhues, Rafael Alfonso/Montesdioca, Gustavo Zimmermann (Eds.) (2016). Digital Capabilities as Driver to DigitalBusiness Performance, 22nd Americas Conference on Information Systems, San Diego, USA. Digital Capabilities as Driver to Digital Business Performance.
- Ghezzi, Antonio/Leso, Bernardo Henrique/Cortimiglia, Marcelo Nogueira (2022). The contribution of organizational culture, structure, and leadership factors in the digital transformation of SMEs: a mixed-methods approach. *Cognition, Technology & Work* 25, 151–179. <https://doi.org/10.1007/s10111-022-00714-2>.

- Jackson, Paul (Ed.) (2015). Networks in a Digital World: A Cybernetics Perspective, ECIS. ECIS 2015 Completed Research Papers, University of Münster, Münster, Germany.
- Mariam H. Ismail, Mohamed Khater, Mohamed Zaki (2017). Digital business transformation and strategy: What do we know so far.
- Organisation for Economic Co-operation and Development (2022). Updated G20/OECD High-Level Principles on SME Financing, Pressemitteilung vom 2022.
- Vogelsang, Kristin/Liere-Netheler, Kirsten/Packmohr, Sven/Hoppe, Uwe (2019). Barriers to Digital Transformation in Manufacturing: Development of a Research Agenda. Proceedings of the 52nd Hawaii International Conference on System Sciences |, 10. Available online at <http://hdl.handle.net/10125/59931>.
- Westerman., George/Calméjane, Claire/Bonnet, Didier/Ferraris, Patrick/McAfee, Andrew (2011). Digital transformation: A roadmap for billion-Dollar organizations

Leadership and Job Satisfaction in the Public Healthcare Sector: An Empirical Analysis of Employees' Motivations

Fotis Kitsios and Maria Kamariotou

Department of Applied Informatics, University of Macedonia, Thessaloniki, Greece

kitsios@uom.gr

mkamariotou@uom.edu.gr

Abstract: The supply of health services, which are primarily supplied by the human resources that staff the health facilities, makes the field of health extremely difficult. The conduct of health professionals as a result of their efforts heavily influences the quality of the services under study. To boost their efficiency and, by extension, the effectiveness of the health units, the administrations of the health units must place a high value on the use of the human component. Simply said, incentives are necessary to incentivize healthcare staff in order for them to please patients and improve their efficacy. Incentives provided to healthcare personnel appear to help them overcome these issues and provide patients with the best care possible, even in situations where they lack the appropriate resources and tools. Many academics argue that giving employees what they need in the form of incentives is a potent weapon that managers may use to motivate them and boost productivity. All health organizations should make use of this component, as it can assist them in addressing and resolving significant issues that restrict their effectiveness. In this context, it's critical to stress that motivating healthcare professionals is urgently needed because doing so improves their performance, which in turn improves the effectiveness of the services offered and the satisfaction of patients. The purpose of the current study is to investigate the potential sources of employee motivation at a public hospital in Northern Greece. Regression analysis was used to examine data that were gathered from 74 hospital personnel. The findings indicate that connections with co-workers and degree of performance are the primary drivers of employee motivation, with pay and job features playing a supporting role. These findings demonstrate that in order for the hospital's administration to increase employee performance, it is necessary to foster a positive work environment and recognize people for their contributions.

Keywords: Leadership, Motivation, Job satisfaction, Performance, Healthcare

1. Introduction

The supply of medical facilities, which is largely provided by the human resources employed by the health units, makes the health field especially complicated. Health workers' actions have an essential effect on the quality of the services provided to patients (Musinguzi et al, 2018). Due to this, it is crucial that health unit administrations place a premium on making the most of the human element in order to boost the efficiency of individual health units. Effective and high-quality patient care is achieved when healthcare professionals have the following conditions met: they are properly trained, they have access to the tools they need to do their jobs, they are given regular feedback on their work, and they report to a supervisor who motivates them to do their best (Borst et al, 2020). Simply put, healthcare providers require incentives to encourage them to please patients and boost their performance (Hotchkiss et al, 2015; Huber and Schubert, 2019; Schopman et al, 2017).

Incentives provided to health personnel appear to assist them in overcoming situations where they lack the necessary tools and equipment to provide adequate care to patients. According to Popa and Popescu (2013) and Rossidis et al. (2016) administrations can encourage workers and boost output by catering to their needs and providing incentives. Using this to address and ultimately overcome significant challenges that restrict their efficacy is something all health organizations should do (Borst et al, 2020; Valdez and Nichols, 2013). Motivating healthcare personnel is crucial because it improves their output, which in turn improves the quality of care and the pleasure of patients (Hotchkiss et al, 2015; Rubel et al, 2021).

The present research aims to examine the factors that may motivate employees at a public hospital in Northern Greece. As the health systems of various nations have been significantly impacted by the global financial crisis, which must be addressed, it is vital that incentives be provided for healthcare employees in order to boost their performance. Health care administrations must find a solution to the problem of decreasing efficiency and effectiveness caused by a lack of health care personnel, materials, and technical equipment. Healthcare organizations need to maximize the human component if they want to efficiently manage their resources and provide high-quality care to their patients.

Greek health system administrators need to create practical incentive schemes for their staff if they want to boost productivity. Health care providers cannot meet their obligations without financial incentives. This means that healthcare management must understand what drives their employees and whether or not this

varies by personality type and line of work. Research conducted throughout the previous several years of the economic crisis on the demands of health personnel and recognizing the enticements that can motivate them will likely add to the findings of this task and be of special benefit.

Section 1 provides an overview of the topic, while Section 2 presents the theoretical background about the motivation of healthcare workers. Section 3 discusses the study's methodology; Section 4 offers the results of the investigation; and Section 5 discusses the study's findings and draws its conclusions.

2. Theoretical Background

2.1 Leadership in Hospitals

Leadership has been shown to be crucial in establishing the favorable conditions required for an organization to realize its objectives. Employee responses to organizational change, company performance, employee job satisfaction, and the dominant company culture all have a significant impact on leadership. A leader's values and personality can have a significant impact on the morale and productivity of his staff. Every leader, depending on his or her individual strengths and weaknesses, is accountable for the resolution and management of any workplace conflicts or problems that may develop (Belrhiti et al, 2020; Curtis and O'Connell, 2011).

A good leader can motivate their team to work hard by painting a compelling picture of the future and showing them how their efforts will pay off. A leader is also effective if he can motivate others under him to work hard and dedicate themselves to the team's success. A leader is also effective when he can motivate his followers and get them dedicated to attaining their objectives. A competent leader will also establish performance and reward standards, as well as effective teams and channels of communication between staff members (Musinguzi et al, 2018; Rubel et al, 2021).

Health care professionals' satisfaction on the job has been shown to rise due to a number of reasons. Salary and income increases are one reason why employees are more satisfied than ever. In truth, salary cuts, invalid payments to medical and nursing staff, and insufficient reimbursement of various allowances in the healthcare sector are all attributable to the pathophysiology of the Greek health system as well as the nation's economic downturn and cutbacks in health care expenses. Reduced job satisfaction is a result of these issues among healthcare workers (Halldorsdottir et al, 2018; Kontodimopoulos et al, 2009).

Medical and nursing staff may benefit from some form of compensation in order to increase their level of job satisfaction and productivity. Therefore, if there were a reward that would boost the satisfaction of each health care worker, then that worker might be more productive. Improvements in overall health unit performance can have a positive impact on patient care (Borst et al, 2020; Kontodimopoulos et al, 2009; Rubel et al, 2021).

Employees in the health care industry report higher levels of job satisfaction and fair treatment from their coworkers. Significant factors that can influence nursing and medical staff job satisfaction include a meritorious independent assessment of advancements and wage hikes, logical fragmentation of duties and work throughout the unit, equitable allocation of shifts, and an unbiased disposition from management (Kontodimopoulos et al, 2009; Schopman et al, 2017). These elements, as we shall see in the following section, can serve as incentives for workers in health units while also contributing to an increase in employee satisfaction.

2.2 Motivating Healthcare Workers

Through a literature study, Tsounis et al. (2013) came to the conclusion that healthcare workers may not respond to incentives in the same manner that workers in other industries do. They add that different types of healthcare professionals have distinct demands and requirements and, hence, can be motivated in different ways. In most cases, financial incentives do not motivate doctors to improve their performance. This is in contrast to the norm across numerous sectors and with other subsets of the healthcare workforce. Instead, it appears that doctors are motivated to keep going when they achieve their goals and receive praise from the hospital's administration and their peers.

Motivating healthcare professionals is an important area of study, and Babic et al. (2014) have made substantial contributions to this field. They looked into whether or not there are distinctions between the private and public health sectors in terms of incentive programs. Employees in the private sector are positively motivated by the availability of security circumstances, and the survey showed that not all employees are

driven by cash rewards, which are relatively low. Also, healthcare employees, whether in the commercial or public sector, benefit from the encouragement and motivation of their colleagues. However, workers in both the commercial and governmental sectors aren't encouraged by the feedback they receive from their bosses. Healthcare personnel cannot be motivated to improve their performance by the current development incentives offered by either the corporate or public health sectors (Mariappan, 2013).

Internal and external factors, respectively, might have a role in the promotion of healthcare personnel, as argued by Batnagar et al. (2017). They typically claim that economic advantages and working surroundings are external incentives that may impact their performance, while their faith, values, and sense of self-confidence are internal variables that influence or motivate them. The goal of the research conducted by Lambrou et al. (2010) was to identify the elements that could encourage healthcare personnel to change their behavior. The study found that workers were most motivated by financial rewards, positive interactions with coworkers, and interesting tasks.

Health unit administrations can boost productivity by incentivizing staff, a topic that Hotchkiss et al. (2015) investigated. Both intrinsic and extrinsic motivation were found to have an effect on performance. The self-efficacy and self-esteem of healthcare personnel are two of the most important internal motivations. It was also shown that in Ethiopia, the primary external reasons that might encourage healthcare personnel are their financial earnings, working environment, and relationships with colleagues.

Another Ethiopian study that sought to identify what motivates healthcare personnel was undertaken by Dagne et al. (2015). This study's findings revealed that the top motivators for healthcare professionals are their supervisors and the quality of the relationship they build with them, followed by financial incentives, job satisfaction, the challenges of performing their duties, and the attractiveness of the facility where they work.

Furthermore, Shah et al. (2016) found that the key variables that might encourage employees in the field of health are the safety of the work environment, acknowledgment and rewarding of their performance, supply of incentives, and the possibility of their development within work.

The management of healthcare facilities can motivate their staff by providing them with some of the incentives mentioned by Janus et al. (2008). Employees are more likely to be motivated when they have a voice in important decisions, have access to training and development opportunities, feel safe in their workplace, have supportive coworkers, and are treated fairly by management. A lot of research (Alotaibi et al, 2016; Halldorsdottir et al, 2018) suggests that healthcare staff value financial incentives offered by health facility management the most. Nurses at Greek hospitals were studied by Gaki et al. (2013) who sought to determine what motivates them to do their jobs. Two hundred nurses participated in the survey, and they all said that money isn't the only thing that keeps them going; learning new skills and gaining experience are just as important. They also claimed that they are driven by the sense of accomplishment they get from carrying out their responsibilities and the general atmosphere of their workplace. The same conclusions were reached by Holmberg et al. (2016) in their survey of Swedish clinical nursing staff.

2.3 Personal and Professional Characteristics of Healthcare Workers

Rosak-Szyrocka's (2015), research is particularly intriguing since it demonstrates how gender plays a key role in distinguishing the health needs of employees and, by extension, the motivations of those who positively impact their behavior. To be more precise, he contends that their demands are affected by views and social preconceptions, necessitating a search for alternative reasons. The results of Lambrou et al. (2010) are consistent with this; they show that women in the healthcare industry are more financially driven by salary than men. Salary was shown to be the most important motivator for women by Goncharuk (2018) while work features were determined to be the most important motivator for men.

Motivating women is more challenging since, as the aforementioned studies observed (Shah et al., 2016), there are differences between the elements that motivate men and women in the health industry. Age, like gender, appears to be a decisive factor in how various healthcare employees are motivated to advance in their careers (Gaki et al, 2013; Kantek et al, 2015; Park and Lee, 2020). In contrast to the aforementioned studies Babic et al.'s (2014) research did not find evidence of gender differences in psychological requirements. Babic et al. (2014) came to the conclusion that demographic features have no bearing on how employees perceive the things that could drive them and have an impact on their performance. Similarly Dagne et al. (2015) discovered no statistically significant connection between the sample's demographics and the reasons that motivate them.

Toode et al.'s (2015) research bolstered the idea that nurses' motivation is affected by factors like age, years of experience in the field, rank, and level of education. They discovered that nurses with more years of experience were more likely to be driven by factors outside of themselves. This is an especially important finding for supervisors to highlight since it raises the question of how to support and sustain employees' intrinsic motivation as they age and spend longer at their jobs in the healthcare industry. Workers who had gotten little training in the past several years were also shown to be less motivated than their more skilled peers. There was no correlation between employees' levels of drive and factors like whether they had kids or lived alone or with a partner.

Managers will have to come up with a variety of strategies to keep their staff motivated, depending on where they fall in the health unit's organizational chart. According to Tsounis et al. (2013), doctors get their drive from a different place than, say, nurses or administrators. Similarly, Lambrou et al. (2010) found that contrary to what was previously asserted about doctors, nurses were more interested in reasons related to pecuniary benefits. According to Grammatikopoulos et al.'s survey (2013) in Greece, "achievements" are the most important component in keeping nurses motivated.

Using data from previous research, we were able to formulate the following hypotheses, which are depicted in Figure 1.

H1: Job related factors positively affect healthcare professionals' satisfaction.

H2: Factors related to salary positively affect healthcare professionals' satisfaction.

H3: Factors related to relationships with colleagues positively affect healthcare professionals' satisfaction.

H4: Factors related to work achievements positively affect healthcare professionals' satisfaction.

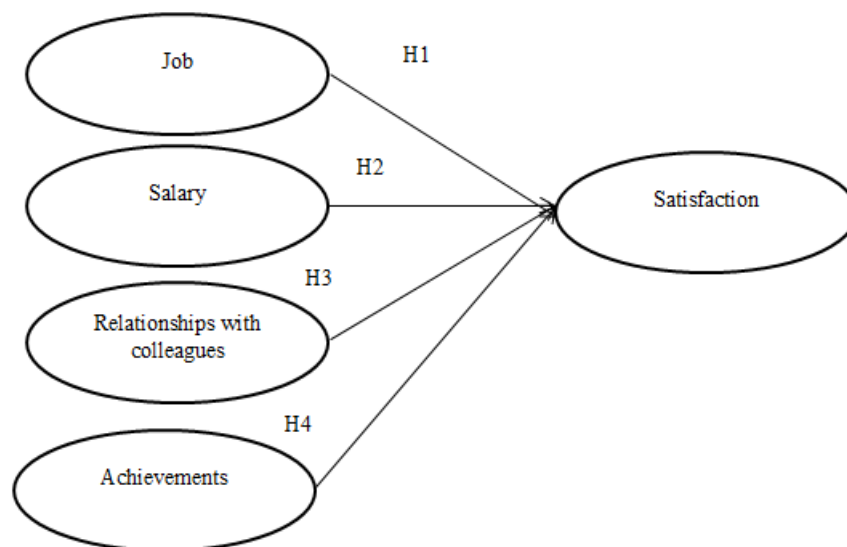


Figure 1: Research model

3. Methodology

Employees of a public hospital in Northern Greece, including hospital administrators, nurses, and doctors, are the subjects of this study. The 947 employees of the hospital in question make up the study's research population. A total of 74 hospital employees participated in the study by submitting valid questionnaires. There was a significant amount of hesitation to fill out the survey, as only 11 of the 150 given questionnaires were filled out correctly and 65 were not filled out at all.

The survey by Paleologou et al. (2006) serves as the basis for the questionnaire, which covers four categories of characteristics to assess healthcare workers' levels of motivation. These factors are related to job, salary, relationships with colleagues and work achievements. A 5point Likert ordinal satisfaction scale was used. Regression analysis was used to analyze the data.

4. Results

Cronbach's alpha was used to determine reliability, and a value of 0.60 was considered enough for validity (Newkirk et al., 2003). Table 1 displays the calculated values of the Cronbach's alpha for the variables.

Table 1: Cronbach a

Variables	No. of items	Cronbach a
Factors related to employment	11	0.848
Factors related to salary	4	0.670
Factors related to relationships with colleagues	8	0.861
Factors related to achievement	6	0.859

The hypothesis testing outcomes of the regression analysis are shown in Table 2. There was no statistically significant relationship found between job factors and satisfaction ($\beta = -0.008$, $p > 0.05$). Thus, H1 cannot be supported. There was a negative and not statistically relationship between the factors that are related to salary and satisfaction ($\beta = -0.012$, $p > 0.05$). Thus, H2 cannot be supported. There was a negative and not statistically significant relationship between the factors that are related to relationship with colleagues and satisfaction ($\beta = -0.186$, $p > 0.05$). Thus, H3 cannot be supported. There was a positive and statistically significant relationship between the factors that are related to work achievements and satisfaction ($\beta = 0.577$, $p < 0.05$). Thus, H4 was supported.

Table 2: Outcomes of regression analysis

Variables	Unstandardized b	Standard error	t	Sig.	P
d.f.=4, $R^2=0.190$, $F=4.034^*$					
Job	-.013	.221	-.057	.955	-.008
Salary	-.015	.183	1.407	.934	-.012
Relationships with colleagues	-.275	.295	3.487	.354	-.186
Achievements	.662	.206	2.251	.002	.577
* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.					

5. Conclusion

5.1 Practical Contribution

Health care providers are not satisfied with the current state of affairs, and this paper's findings can help the hospital come up with more effective tactics to ensure patients receive high-quality care. It turns out that healthcare employees aren't too thrilled with how well they're informed about the strategic goals of healthcare units, how well they're able to contribute to decision-making, or how much opportunity they're given to grow as individuals and as professionals. This necessitates a shift in approach from management, one that places a premium on staff welfare and encourages them to take on greater responsibility within the healthcare system. So that hospital staff can feel that they are contributing to their own growth and advancement, it is important that management foster the establishment of educational programs and foster an environment conducive to learning.

It was also shown that the positive relationships among hospital employees are a major source of motivation. This necessitates that the hospital's administration do everything it takes to foster an environment of harmony and mutual aid among the medical staff. It needs to actively seek out means of fostering cordial cooperation and close bonds between its members. If workers aren't satisfied, they won't be able to do their jobs well or offer the high-quality healthcare that the country's residents desperately need, especially now.

5.2 Limitations and Future Research

Although the study's findings are intriguing, they cannot be extrapolated to the broader healthcare workforce because the participants were drawn from a single institution. It's important to remember that the survey only collected data from a limited subset of eligible respondents. These findings highlight the need for a future survey of a larger population of health workers, representing different regions of the country, to assess the situation nationwide and examine the factors that motivate the staff to acquire the suitable attitude and behavior required for work. Future studies of this nature will shed light on the requirements and motivations of hospital staff across the country. As an added bonus, the research provides some helpful data that can be used in assessments of the motivational aspects of medical attendants. The questionnaire can be used to develop several efficient interview techniques and shine a light on explicit individual mediations that can increase motivation in a given role or team.

References

- Alotaibi, J., Paliadelis, P. S. and Valenzuela, F. R. (2016) "Factors that affect the job satisfaction of Saudi Arabian nurses", *Journal of nursing management*, Vol 24, No. 3, pp. 275-282.
- Babic, L., Kordic, B. and Babic, J. (2014) "Differences in Motivation of Health Care Professionals in Public and Private Health Care Centers", *SJAS*, Vol 11, No. 2, pp. 45-53.
- Belrhiti, Z., Van Damme, W., Belalia, A. and Marchal, B. (2020) "Unravelling the role of leadership in motivation of health workers in a Moroccan public hospital: a realist evaluation", *BMJ open*, Vol 10, No. 1, pp. 1-17.
- Bhatnagar, A., Gupta, S., Alonge, O. and Asha, G. (2017) "Primary health care workers' views of motivating factors at individual, community and organizational levels: a qualitative study from Nasarawa and Ondo states, Nigeria", *The International Journal of Health Planning and Management*, Vol 32, No. 2, pp. 217-233.
- Borst, R. T., Kruijen, P. M., Lako, C. J. and de Vries, M. S. (2020) "The attitudinal, behavioral, and performance outcomes of work engagement: A comparative meta-analysis across the public, semipublic, and private sector" *Review of Public Personnel Administration*, Vol 40, No. 4, pp. 613-640.
- Curtis, E. and O'Connell, R. (2011) "Essential leadership skills for motivating and developing staff", *Nursing management*, Vol 18, No. 5, pp. 32-35.
- Dagne, T., Beyen, W. and Berhanu, N. (2015) "Motivation and Factors Affecting It among Health Professionals in the Public Hospitals, Central Ethiopia", *Ethiop J Health Sci*, Vol 25, No. 3, pp. 231-242.
- Gaki, E., Kontodimopoulos, N. and Niakas, D. (2013) "Investigating demographic, work-related and job satisfaction variables as predictors of motivation in Greek nurses", *J Nurs Manag*, Vol 21, No. 3, pp. 483-490.
- Goncharuk, A. G. (2018) "Exploring a motivation of medical staff", *The International Journal of Health Planning and Management*, Vol 33, No. 4, pp. 1013-1023.
- Grammatikopoulos, I. A., Koupidis, S. A., Moralis, D., Sadrazamis, A., Athinaiou, D. and Giouzevas, I. (2013) "Job motivation factors and performance incentives as efficient management tools: A study among mental health professionals", *Archives of Hellenic Medicine*, Vol 30, No. 1, pp. 46-58.
- Halldorsdottir, S., Einarsdottir, E. J. and Edvardsson, I. R. (2018) "Effects of cutbacks on motivating factors among nurses in primary health care", *Scandinavian journal of caring sciences*, Vol 32, No. 1, pp. 397-406.
- Holmberg, C., Sobis, I. and Carlström, E. (2016) "Job satisfaction among Swedish mental health nursing staff: A cross-sectional survey", *International Journal of Public Administration*, Vol 39, No. 6, pp. 429-436.
- Hotchkiss, D., Bantayerna, H. and Tharaney, M. (2015) "Job satisfaction and motivation among public sector health workers: evidence from Ethiopia", *Human Resources for Health*, Vol 13, No. 83, pp. 1-12.
- Huber, P. and Schubert, H. J. (2019) "Attitudes about work engagement of different generations—A cross-sectional study with nurses and supervisors", *Journal of nursing management*, Vol 27, No. 7, pp. 1341-1350.
- Janus, K., Amelung, V. E., Baker, L. C., Gaitanides, M., Schwartz, F. W. and Rundall, T. G. (2008) "Job satisfaction and motivation among physicians in academic medical centers: insights from a cross-national study", *Journal of Health Politics, Policy and Law*, Vol 33, No. 6, pp. 1133-1167.
- Kachigan, S. K. (1991) *Multivariate statistical analysis: A conceptual introduction*, Radius Press, Santa Fe.
- Kantek, F., Yildirim, N. and Kavla, İ. (2015) "Nurses' perceptions of motivational factors: a case study in a Turkish university hospital", *Journal of nursing management*, Vol 23, No. 5, pp. 674-681.
- Kitsios, F., Stefanakakis, S., Kamariotou, M. and Dermentzoglou, L. (2019) "E-service Evaluation: User satisfaction measurement and implications in health sector", *Computer Standards & Interfaces*, Vol 63, pp. 16-26.
- Kontodimopoulos, N., Paleologou, V. and Niakas, D. (2009) "Identifying important motivational factors for professionals in Greek hospitals", *BMC health services research*, Vol 9, No. 1, pp. 1-11.
- Lambrou, P., Kontodimopoulos, N. and Niakas, D. (2010) "Motivation and job satisfaction among medical and nursing staff in a Cyprus public general hospital", *Human resources for health*, Vol 8, No. 1, pp. 1-9.
- Mariappan, M. (2013) "Analysis of nursing job characteristics in public sector hospitals", *Journal of Health Management*, Vol 15, No. 2, pp. 253-262.
- Musinguzi, C., Namale, L., Rutebemberwa, E., Dahal, A., Nahirya-Ntege, P. and Kekitiinwa, A. (2018) "The relationship between leadership style and health worker motivation, job satisfaction and teamwork in Uganda", *Journal of healthcare leadership*, Vol 10, pp. 21-32.

- Newkirk, H. E., Lederer, A. L. and Srinivasan, C. (2003) "Strategic information systems planning: too little or too much?", *The Journal of Strategic Information Systems*, Vol 12, No. 3, pp. 201-228.
- Paleologou, V., Kontodimopoulos, N., Stamouli, A., Aletras, V. and Niakas, D. (2006) "Developing and testing an instrument for identifying performance incentives in the Greek health care sector", *BMC Health Services Research*, Vol 6, No. 1, pp. 118-128.
- Park, J. and Lee, K. H. (2020) "Organizational politics, work attitudes and performance: the moderating role of age and public service motivation (PSM)", *International Review of Public Administration*, Vol 25, No. 2, pp. 85-105.
- Popa, I. and Popescu, D. (2013) "Motivation in the Context of Global Economic Crisis", *Journal of Eastern Europe Research in Business & Economics*, Vol 2013, pp. 1-13.
- Rosak-Szyrocka, J. (2015) "Employee motivation in health care", *Production Engineering Archives*, Vol 6, No. 1, pp. 21-25.
- Rossidis, I., Aspidris, G., Blanas, N., Bouas, K. and Katsmarros, P. (2016) "Best Practices for Motivation and their Implementation in the Greek Public Sector for Increasing Efficiency", *Academic Journal of Interdisciplinary Studies*, Vol 5, No. 3, pp. 144-150.
- Rubel, M. R. B., Hung Kee, D. M. and Rimi, N. N. (2021) "High-performance work practices and medical professionals' work outcomes: the mediating effect of perceived organizational support", *Journal of Advances in Management Research*, Vol 18, No. 3, pp. 368-391.
- Schopman, L. M., Kalshoven, K. and Boon, C. (2017) "When health care workers perceive high-commitment HRM will they be motivated to continue working in health care? It may depend on their supervisor and intrinsic motivation", *The International Journal of Human Resource Management*, Vol 28, No. 4, pp. 657-677.
- Shah, M.S., Zaidi, S., Ahmed, J. and Rehman, S. (2016) "Motivation and Retention of Physicians in Primary Healthcare Facilities: A Qualitative Study From Abbottabad, Pakista", *Health Policy Management*, Vol 5, No. 8, pp. 467-475.
- Toode, K., Routasalo, P., Helminen, M. and Suominen, T. (2015) "Hospital nurses' work motivation", *Scandinavian journal of caring sciences*, Vol 29, No. 2, pp. 248-257.
- Tsounis, A., Sarafis, P. and Bamidi, P. (2013) "Motivation among Physicians in Greek Public Health-Care Sector", *British Journal of Medicine & Medical Research*, Vol 4, No. 5, pp. 1094-1105.
- Valdez, C. and Nichols, T. (2013) "Motivating Healthcare Workers to Work During a Crisis: A Literature Review", *Journal of Management Policy and Practice*, Vol 14, No. 4, pp. 43-51.

Technological vs. Non-Technological Mindsets: Learning From Mistakes, and Organizational Change Adaptability to Remote Work

Wioleta Kucharska and Maciej Kucharski

Gdansk University of Technology – Gdansk TECH, Fahrenheit Universities Union, Poland

wioleta.kucharska@pg.edu.pl

Abstract: The permanent implementation of the change in working methods, e.g., working in the virtual space, is problematic for some employees and, as a result, for management leaders. To explore this issue deeper, this study assumes that mindset type: technological vs. non-technological, may influence the organizational adaptability to change. Moreover, the key interest of this research is how non-technological mindsets adapt to remote work in the long run. Based on the OLS regression (SPSS PROCESS), authors analyze three data sets gathered via the questionnaire distributed using the CAWI method among Polish knowledge workers; the first data set was gathered in December 2019 before the COVID-19 crisis, and the next in 2021 and 2022. Findings revealed that before COVID-19, high intensity of contacts via technology-supported change adaptability only for the IT industry. Results obtained two and three years later exposed that interactions via technology also increased the change adaptability in other sectors. This study confirms that the technological environment can change the employee mindset. Nevertheless, at the same time, the adaptability process can be prolonged and complex even for highly educated knowledge workers' groups. Since there is no development without technology today - patience and long-run perspective thinking are recommended to achieve sustainable growth. It is critical. Adaptation to technology-dominated virtual workspaces must continue, even if this is problematic for non-technological mindsets; abandoning this idea will only make the inevitable transformation longer and more challenging. Collective intelligence creation requires inclusion and patience instead of exclusion of those who face problems or abandonment of change when facing implementation problems rooted in mindsets.

Keywords: Organizational learning, Change adaptability, Organizational intelligence, Learning via technology, Learning from mistakes, Technology adoption, COVID-19, Mindset, Collective intelligence, Tacit knowledge

1. Introduction

Technology today often assists with any form of formal and informal learning. But regarding working places, most of the learning at work happens informally (Swain *et al.*, 2021; Lucena Barbosa and Borges-Andrade, 2022). Therefore, this study focuses on informal learning.

In contrast to formal learning, defined as "institutionalized, planned and structured" (Choi and Jacobs 2011, p.241), informal learning is described as mostly an unstructured, empirical, and non-institutionalized process (Eraut, 2004). Employees learn informally primarily by talking, collaborating, or experimenting, e.g., learning by doing that supports tacit knowledge awareness and sharing (Kucharska and Erickson, 2023). Zhou *et al.* (2017) pointed out that technology can effectively support interactions. At the same time, Stahl and Hesse (2006) noted that computer-supported interactions and learning might be perceived as problematic by some groups of employees who struggle to interact through awkward computer interfaces and the constraints of their interpersonal relationships. Even though some years have passed since they presented this observation, this problem might still be actual, e.g., for millennials. Besides, the recent study by Altebarmakian and Alterman (2019) suggests that even some young learners might find the technological learning environment, e.g., online learning via the internet, an uncomfortable form of interaction, and they noted that many social and psychological obstacles that might cause social interaction problems in virtual space. Nevertheless, communication-based information technologies significantly foster intra-organizational interaction in today's progressively digitized work environments (Wickramasinghe and Ramanathan, 2022). Therefore, it is worth verifying how technology-driven interactions and non-technology interactions influence informal learning at work. It matters because the current reality of remote working pushes equally all employees to work and learn via technology. So, this study explores how technological and non-technological mindsets adapt to new, technology-dominated reality in the long run. The knowledge from this study may support the inclusion of all employees with technological and non-technological mindsets in technology-dominated workplaces.

So bearing in mind that technology is perceived as a driver of change (Papageorgiou and Demetriou, 2019) this study aims to explore if the technology-mediated interactions support the relationship of informal organizational learning from mistakes component of culture with change adaptability among employees with technological and non-technological mindsets - dynamically. Formulating this aim, we were inspired by Papageorgiou and Demetriou (2019), who suggested that learning and information technology can change the human mindset. Moreover, recently, Klamar *et al.* (2022) noted that employee mindset matters for learning from errors. Technological mindsets are also seen as open-minded. Therefore, the idea of this study is to explore

how the technological working environment affects mindsets (technological and non-technological). Specifically, the question is: How do employees with a "technological mindset" and employees without it adapt to changes thanks to accepting mistakes as a potential source of learning when cooperating via technology? The answer matters, mainly that the COVID-19 crisis pushed organizations to work remotely and communicate via technology at a much higher level of intensity than ever before (Järvelä and Rosé, 2020). Therefore, so far, mostly perceived as informal –learning from mistakes via technology interactions is worth investigating more in-depth. If informal learning via technology at work occurs, it can be considered a symptom of smooth adaptability to new working conditions.

2. Literature Overview and Hypotheses Formulation

Organizational learning and change adaptability (organizational intelligence)

Feuerstein et al. (1979) defined "intelligence" as the ability to adapt to change. Following these researchers, the organizational capacity to adapt to change is seen as its intelligence. Since the organization is a network of people, organizational intelligence is a collective issue. Thus, collective intelligence developed in the organization reflects its ability to adapt. Change is a characteristic of the current economy. Therefore organizations need to adapt to the changes to survive and grow (Griffin et al., 2004). The key challenge today is to create such conditions at work that people can learn and change not individually but collectively (Kucharska and Bedford, 2023a,b). Organizational learning and change are interconnected (Watad, 2019). When people learn together, their perceptions change because their collective knowledge increases. However, it is a complex, challenging, multidimensional process determined by organizational systems and particular employees' cognitive and behavioral responses shaped often by their learning abilities (Borges and Quintas, 2020). Moreover, Goswami (2019) noted that organizations must continuously evolve and adapt to changes in today's aggressive and complex business environment. It is why this study focuses on how the relationship between the learning culture component of mistakes acceptance and change adaptability evolved in the technology-dominated workspace. As claimed in the introduction section, it matters because the current reality of remote working pushes all employees equally to work and learn via technology. So, this study aims to explore how technological and non-technological mindsets adapt to new, technology-dominated reality in the long run, to understand this process better and, thanks to this, to support better its inevitable implementation among all employees with technological and non-technological mindsets. Learning from mistakes at work requires a specific safety climate. It is why the mistakes acceptance component of learning culture is implemented for this research.

Mistakes acceptance component of learning culture and change adaptability

Previous studies proved that developing "mistakes acceptance" component of the learning culture fosters a higher level of organizational ability to learn and adapt (Thomas and Brown, 2011; Kucharska and Bedford, 2020). Moreover, Maes and Van Hootegem's (2019) model of change assumes that the reflection from a mistake (understood as input to the organizational system) can trigger change. Therefore, based on the above literature review about learning from mistakes, the following hypothesis has been formulated:

H1: The acceptance of mistakes component of learning culture positively influences adaptability to change (organizational intelligence).

Technology-driven human interactions

Most studies about technology-driven human interactions focus on e-learning and other dedicated learning programs, applications, and actions (e.g., Hayes and Graham, 2019). The present study does not focus on formal learning via technology-dedicated applications; instead, it focuses on informal, everyday learning processes via the acceptance of mistakes made by average individuals at work. It is because we assume that the developed mistakes acceptance component of learning culture at work is critical for adaptability by securing a safe feeling that supports adaptability to new conditions. Informal learning mainly occurs in active meetings (Treasure-Jones et al., 2019). Zhou et al. (2017) noted that technology could effectively assist interactions. This study examines how people adapt to workplaces where interaction via technology, e.g., social software, becomes increasingly intensive. Therefore, technology is a factor that in the given theoretical model (Figure 1) moderates the relationship between the acceptance of mistakes component of culture and organizational adaptability to change in new working conditions.

Moreover, Ringberg et al. (2019) proved that innovation results from change and depends as much on mindsets as technology. They describe technological and managerial mindset transformations through a matrix of

incremental, radical (technology and mindsets) innovations that result from constant evaluation of inevitable change. Based on Ringberg et al. (2019) and Shamsuddoha and Woodside (2022), this study assumes that technological and non-technological mindsets matter for change adaptability.

Technological and non-technological mindsets in the context of industry

Statista.com (2019) noted that industries such as finance and IT dominate among those industries where employees most frequently work remotely. So, communication via technology may be related to the industry. Technology is perceived as a driver of change (Huda, 2019). Moreover, people who use technology are more likely to be open-minded (Kmieciak, 2019). Therefore, they might be probably more ready than others to learn and adapt to changes. But, at the same time, Campana and Agarwal (2019) found that low-technology environments are not a barrier to learning. So, it is worth verifying how technology-driven mindsets and non-technology mindsets react to adapt to changes thanks to technology-mediated interactions at work. Is there any difference? If yes, how may it affect organizations? Is it affected by industry? Answering these questions is the aim of this study. It matters to understand the adaptability processes better and, thanks to this support, organize the inclusion of all employees with technological and non-technological mindsets in technology-dominated workplaces.

Moderated Moderation

IT competency differs across industries (Kucharska and Erickson, 2019). Brougham and Haar (2018) noted that higher usage of smart technology negatively affects employees' well-being and interactions in the service sector. Fukuzawa and Cahn (2019) said that the influence of technology on learning effectiveness might depend on the overall environmental context. Hence, it is worth exploring how industry affects change adaptability via acceptance of mistakes in working conditions characterized by intensive technology-driven employee interactions. The current investigation aims to verify how the technological mindset (IT industry) and non-technological (represented by other industries) affect mistakes acceptance as a source of learning influence on change adaptability. Based on this, the following hypothesis has been proposed:

H2: Industry moderates the moderated intensity of interactions via technology relation between mistakes acceptance and change adaptability.

Summing up, the industry is included in the study as a factor that might moderate technology usage at work and, next together, moderate adaptability to change, driven by learning via accepting mistakes. Therefore, the examined in this study effect of learning via accepting mistakes on adaptability to change is doubly moderated (moderated moderation). Figure 1 presents the whole idea of the study graphically.

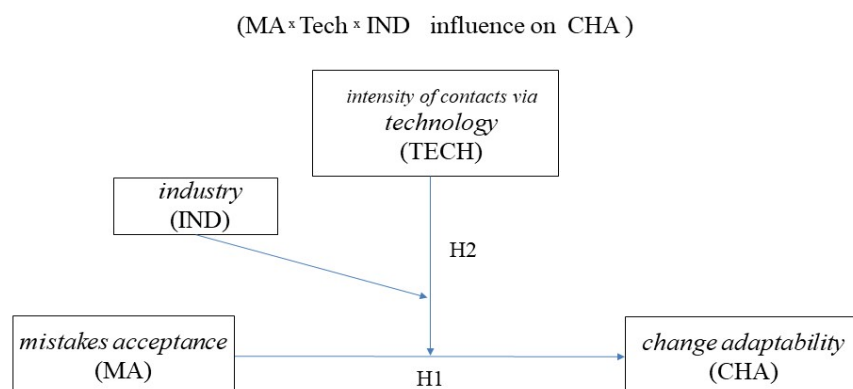


Figure 1: Theoretical model

3. Methodology

This study applies PROCESS macro, an OLS regression, to analyze dynamically the explored in the previous section relations. To do so, three data sets were gathered via the questionnaire distributed using the CAWI method among Polish knowledge workers; the first data set was gathered in December 2019 before the COVID-19 crisis, and the next in 2021 and 2022.

Samples

To achieve the study's aims, a sample comprising 380 (gathered in December 2019) and 321 (gathered in September 2021), and 323 (gathered in December 2022) cases were employed. Respondents were recruited

among Polish employees working in knowledge-driven organizations across industries via a research panel conducted partially by answeo.com (this enabled to invite of the same group of respondents with hope for their participation) and partially by the snowball sampling method. Interviewing knowledge workers and managers is always problematic due to their limited availability.

Therefore, the snowball method of data collection based on a network of recommendations was included to secure the sample quota in December 2022nd. Besides, in 2019 and 2021, questions were asked to the same panel of respondents, but respondents answered voluntarily (there was no control of who responded and who did not), so all samples differ. All samples (2019/2021/2022) were represented mostly by men (60%/70%/50%), aged 18-24 (15%/16%/20%), 25-34 (43%/45%/40%), 35-44 (23%/20%/20%), 45-54 (15%/10%/10%), 55-74 (3%/9%/10%), >75 (1%/0%/0%); working in small (25%/20%/20%), medium (31%/35%/30%), big (21%/20%/30%) and large (23%/25%/20%) companies; in the IT industry (30%/39%/41%), sales (12%/8%/9%), finance (11%/15%/10%), and production (10%/7%/5%), service (10%/12%/15%), education (8%/12%/20%), construction (7%/5%/0%), healthcare (4%/2%/0%), logistics (3%/5%/0%), and other (3%/3%/0%) industries. All respondents were highly educated and represented the knowledge workers' group (declared by the qualification question). For the study purpose, it was crucial to examine those who are focused on knowledge and want to learn.

Measures

Mistakes acceptance and change adaptability were measured using scales adapted from Kucharska and Bedford's (2020) study. Appendix 1 presents the statements as well as scales and reliabilities. Respondents reacted to statements using a 7-point Likert scale; the next scale reliabilities were assessed (Cronbach's $\alpha > .83$), and composite variables were developed. The intensity of interactions via technology was measured using a 3-point ordinal scale (1-low, 2-medium, 3-high). Dummy variables were used to operationalize the next intensity and industry variables (e.g., 1-IT, 0-other). Industry influence was analyzed for the IT industry concerning the remnant part of the sample named "other." The total variance of the sample was extracted at the 72%/78%/78% level, and a Kaiser-Meyer-Olkin (KMO) test of the sample's adequacy at the 0.81/0.83/0.84 level confirmed the sample's good quality (Hair *et al.*, 2010). Further, a Harman single-factor test (Podsakoff and Organ, 1986) was run, and the 35%/36%/32% result confirmed there was no bias. Data were obtained from November to December 2019, in September 2021, and in December 2022.

Analytical procedure

After the positive sample and scales assessment, composite variables were created to analyze the hypothesized relations using the PROCESS procedure for SPSS Version 3.4 (Hayes, 2018). It started: first with the assessment of the focal for this study relation between mistakes acceptance on change adaptability. Next, the significance of the expected moderated effects of industry (IND) on the intensity of interactions via technology (TECH) was verified. Finally, doubly-moderated effects were included in the last stage of the examination. Namely, the moderated by industry effect of intensity of interactions via technology on the relation between mistakes acceptance (MA) and change adaptability (CHA) was assessed and presented in Figure 2. These effects are more in-depth, investigated, and discussed in the next sections.

4. Results

Figure 2 and Table 1 present a summary of the obtained moderated effects on the focal relation between the acceptance of mistakes and adaptability to change. Significant effects were noted for moderation by the intensity of interactions via technology and industry for all data sets (2019, 2021 and 2022).

Table 1: Hypotheses verification

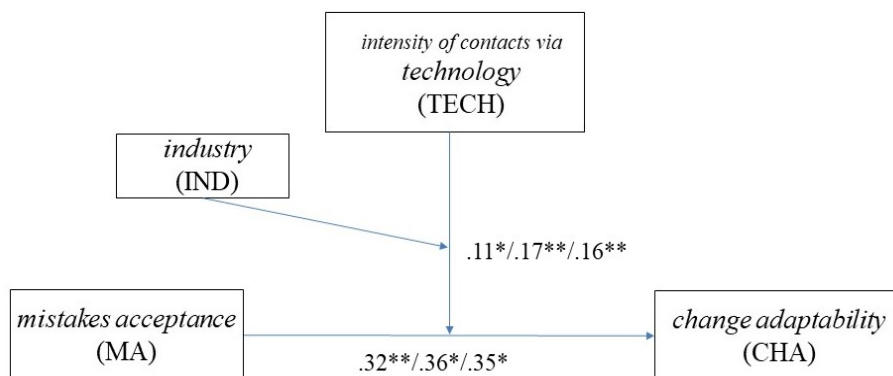
	R	R-sq	MSE	F	df1	df2	p	
2019	.2940	.0865	1.1253	5.0290	7.0000	372.0000	.0000	
2021	.3640	.1325	1.4662	7.4821	7.0000	343.0000	.0000	
2022	.3560	.1225	1.3682	7.2823	7.0000	313.0000	.0000	Regression
Models Summary								
Hypothesis	β		t-value		p-value		Hypothesis verification	

H1 (MA -> CHA)	.34/.36/.35	3.37/2.18/2.17	***/*/*	Supported/Supported/ Supported
H2 effect of TECH moderated by IND moderation on MA -> CHA (IND x TECH x MA)	.11/.17/.16	2.11/2.90/2.89	*/**/**	Supported/Supported/ Supported

Note: n= 380/321/323 (2019/2021/2022) * p < .05 ** p < .01 ***p < .001

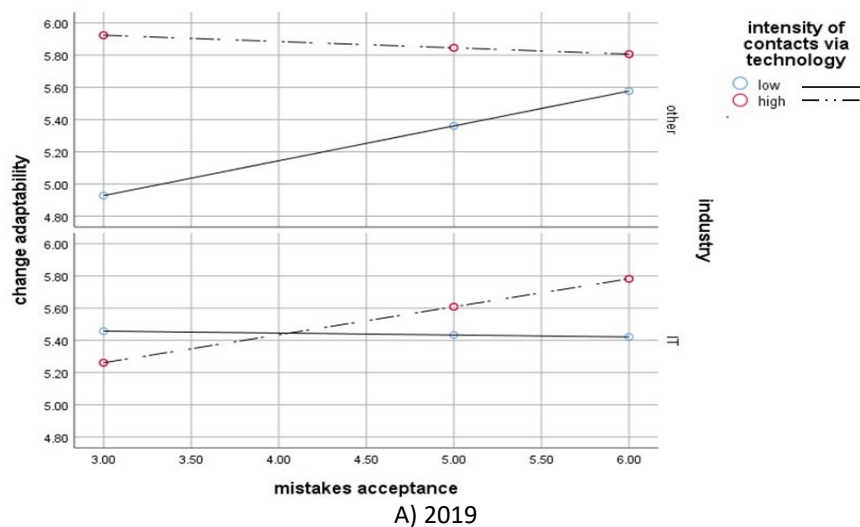
It is worth highlighting that for the first analysis (2019) - the overall observed change adaptability is higher for those employees who use technology for regular interactions on a high level than for those who use it on a low level. However, when the same relation is analyzed and divided into two groups: the IT industry group and the group 'others' (see Figure 3a), the opposite (positive) effect is observed for IT. For the sample gathered in 2019, this effect is positive only for the IT industry. For other sectors, the negative impact is noted. Hence, based on the 2019 sample, it can be concluded that industry matters when it comes to leveraging the "adaptability to change" driven by "mistakes acceptance" thanks to technology-driven human interactions. Nevertheless, results obtained based on the samples gathered in 2021 and 2022 exposed that interactions via technology also increased the change adaptability in industries other than IT (Figure 3b).

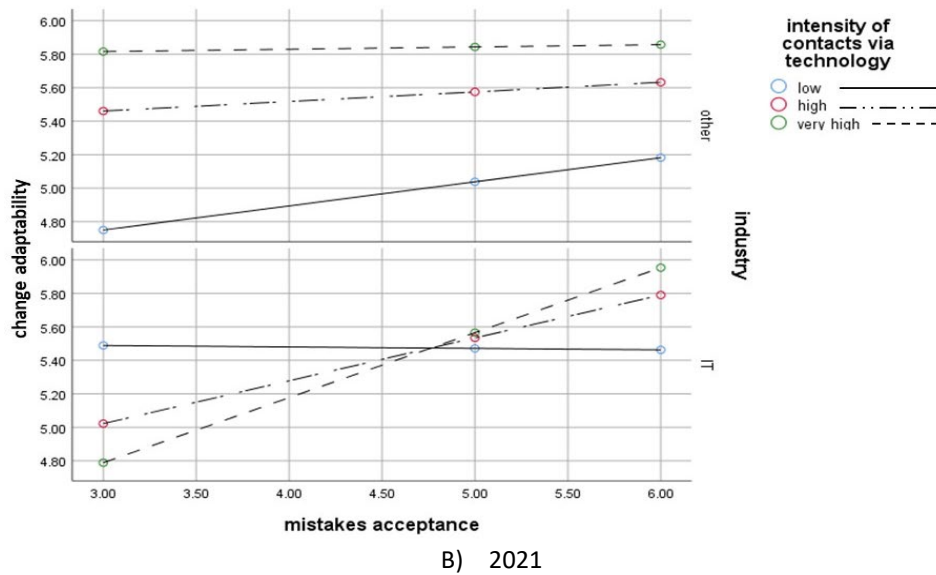
(MA x Tech x IND influence on CHA)



Notes: n = 380/321/323 (2019/2021/2022) * p < .05, ** p < .01, *** p < .001; based on the output from PROCESS Procedure for SPSS Version 3.4; all results are not standardized; level of confidence for all confidence intervals in output: 95.

Figure 2: Results





Note: A) 2019 n = 380; IT = 114 (30% of the total sample); other n = 266; level of confidence for all confidence intervals in output: 95; all results are not standardized. B) 2021 n = 321; IT = 125 (39% of the total sample); other n = 196; level of confidence for all confidence intervals in output: 95; all results are not standardized. Results obtained for 2022 are very similar to those obtained in 2021; therefore, they have not been repeated in the visualization given below.

Figure 3: Intensity of interactions via technology, mistakes acceptance and change adaptability: IT industry vs. other industries A) 2019 (before COVID-19), B) 2021.

5. Discussion

Presented research showed that informal learning from mistakes lets organizations adapt better to changes when the whole organizational system is consistent (H2). This direct effect is weaker when inconsistent, as is observed (Figure 2) in the results obtained for the 2021 sample (H1). Technology usage was harshly pushed into human interactions at work by the COVID-19 pandemic. As a result, in 2019, communication at work was not as broadly technology-dominated as in 2021 and 2022. So, the observed earlier consistency has been violated.

Specifically, it is visible, based on results obtained for the 2019 sample – that the employees with technological mindsets learn from mistakes and adapt to changes in technology-supported conditions, and employees with non-technological mindsets do it in non-technological working conditions do equally well.

So, the alignment of mindset and learning conditions meaning to obtain the best learning effects from informal learning is clear. At the same time, the observations of results obtained based on the 2021 and 2022 samples are different. Namely, it is still observed that "low-intensity interactions via technology" for "others" are equally effective for change adaptability driven by informal learning from mistakes observed for the IT "high-intensity interactions via technology." But at the same time, for "high" and "very high" intensity, this relation is also positive for the group "others." For 2019 data – for this relation, the negative effect is noted. It suggests that the long-lasting (in this case, three years) change in environmental conditions leads to mindset evolution. However, the observed evolution is not spectacular, but it confirms the technology's power to drive the change of mindset. Discussing the broader technology factor, it is worth recalling Hoe's (2019) study, which stressed the need for digital learning ecosystem development. Namely, the current digitalization era forces digital learning culture. On the contrary, Brougham and Haar (2018) noted that higher usage of smart technology in the service sector leads to lower organizational commitment and career satisfaction, as well as higher cynicism and depression among employees. This shows that technology is perceived differently by people working in different industries and representing different mindsets. So indeed, it is confirmed by the observed in this study cohesion of the "technological mindset" and "working conditions" represented by the IT industry in sample 2019, and it is even stronger in sample 2021 (Figure 3a-b) and differs from other sectors. Besides, Papageorgiou and Demetriou (2019) suggested that learning and information technology can change the human mindset. This study confirms it.

6. Practical Implications

The identified critical challenges for learning organizations today based on the current study are first, the creation of internal mechanisms supporting a safe environment for learning; second, the development of effective communication methods between "technological mindsets" and "non-technological," especially in the context of a sensitive issue of mistakes at work. For a "non-technological" mindset, this usually tricky communication can be made even more problematic by the tech environment itself. The formal implementation of a constant learning culture, including the acceptance of mistakes component, might be critical when an employee's mindset and working environment are not entirely coherent. Besides, since the COVID-19 pandemic harshly pushed the technology to human interactions at work, transformational leaders' support for informal learning may be critical for the broadly evolutionary expansion process of the "new reality" of a technology-supported working environment in all industries other than only leading IT.

Moreover, a multidisciplinary approach to tasks composed of different mindsets can perform better than mono-mindsets (Prestes Joly *et al.*, 2019). Therefore, consistent, e.g., technological or non-technological workplaces, is not realistic and not an optimal solution for ambitious organizations. So, a formal learning policy via mistakes and authentic learning culture seems to be inevitable for aspiring and genuinely learning organizations. Therefore, in light of all the above, the direct implication of this research is that organizations need to think about their future working strategy in a long-run perspective. For example, if they decide to work remotely, they need to be ready for a very long adaptation process of those who used to work face-to-face, which may lead temporarily to the decreased performance of some groups of employees; they should not give up this strategy just because of facing difficulties that, in light of the given study - inevitable. Non-technological mindsets just need more time to adapt to technological workplaces. Contextual learning from everyday experiences at work (including mistakes), coming from e.g., "learning by doing" or "learning via interactions," are sources of tacit knowledge that significantly impacts performance, especially innovativeness (Kucharska and Erickson, 2023). In such a context, organizations with virtual and technological workspace-dominated space of work aims must be ready so that the innovation performance of the non-technological mindset can temporarily decrease. The temptation to give up and go back to "normal" to sustain a performance level is an illusion. The prospect of giving up and returning to "normality" to maintain the level of productivity organizations used to expose before the forced period of functioning in the virtual workspace can be a waste of time only. It is because the hyperdynamic business environment is hyperdynamic exactly, thanks to technology. So, technological working space is inevitable.

The study exposed that the permanent implementation of the change is problematic even in the group of knowledge workers. So, good management practice requires long-run perspective attention to successful implementation, especially those changes that oppose employees' mindsets. It is critical. Adaptation to technology-dominated virtual workspaces must continue, even if this is problematic for non-technological mindsets; abandoning this idea will only make the inevitable transformation longer and more challenging. Collective intelligence creation requires inclusion and patience instead of exclusion of those who face problems or abandonment of change when facing implementation problems rooted in mindsets.

This study confirms that the technological environment can change the employee mindset. Nevertheless, at the same time, it exposes that the adaptability process can be prolonged and complex even for highly educated knowledge workers groups. Since there is no development without technology today - patience and long-run perspective thinking are recommended to sustain company growth.

Tacit knowledge implications for leaders

The relatively big challenge in the new reality of remote work is tacit knowledge sharing—social distancing may cause trouble with trust in employee-employer relations and among workmates. The trust supports tacit knowledge sharing that is vital for organizational intelligence activation (Kucharska and Bedford, 2023b). So, to avoid such tacit knowledge flow blocking, the technology supporting remote work should be developed in a way enabling bonding and organizational inclusion building. Kucharska's and Erickson's (2023b) recent study exposed that regarding IT competency composed of the infrastructure, knowledge, and operations dimensions for the IT industry, infrastructure and operations are the most critical. For other industries, it is the infrastructure, operations, and knowledge dimensions of the IT competency that matters for tacit knowledge sharing. So, for IT- mindsets, the problem of "how to use technology" is not crucial. Supporting remote-work software functionality that fosters bonding and inclusion to maintain engagement, knowledge sharing, and co-creation among workmates is critical in such a case. Tools availability and managerial directions regarding organizing (working methods) are critical for tacit knowledge sharing in IT. Whereas for non-technological oriented

mindsets, first the issue of "how to use" technology (the IT-knowledge dimension) and following working methods (IT-operations dimension) are critical for tacit knowledge sharing – often gained by non-formal learning, also from mistakes as we wrote in this paper.

In light of all the above, the implications for leaders are clear: non-IT mindset-dominated workers need more support to adapt to technology-dominated workplaces. So, instead of giving up and returning to "normality," leaders should put more effort into organizing workplaces fitted to the new reality and supporting non-technological mindset-dominated employees in adaptability to technological tools by making them "human friendly". The quality of the software shadowing remote work that focuses more on bonding and inclusion to maintain work engagement, knowledge sharing, and co-creation among workmates than on algorithmic management assessing employee performance indicators (KPIs) can be the solution to build trust, such vital for tacit knowledge sharing at work for both- technological and non-technological mindsets.

Besides, Choi et al. (2019) noted that technological or cultural environmental misfits might motivate employees to acquire new skills and adapt to changes. Still, Bligh et al. (2018) proved that leaders might destroy the positive employee mindset for learning from errors. Therefore, informal learning from mistakes may be problematic when environmental misfit occurs, and leaders do not support employees.

7. Limitations and Further Research

The main limitation of this study is that it focuses on informal and probably subconscious training via acceptance of mistakes to adaptability to change. The obtained low $R^2=0.0865/0.1325$ can be explained by the fact that informal organizational learning, especially from mistakes, is subliminal. Besides, the results of this study were based on a Polish sample; therefore, further national studies are needed. Furthermore, the presented comparison results are based on samples from the same panel, but they are not perfectly identical. Results based on the experimental group would definitely be much more reliable. Furthermore, a pandemic situation is presented here as an environmental change context that triggers essential changes in working conditions (technology-supported interactions expansion). It is not shown or considered here as a factor directly influencing learning attitudes. So, the pandemic influence on learning attitudes requires different studies. Besides, the "acceptance of mistakes" component of learning culture is used here as a proxy for learning from mistakes. Naturally, it is not the same to accept something as a potential source of learning and learn from it. Still, following Mezirow (1995), it is contradictory to learn from mistakes and ignore them as a source of learning simultaneously. It is assumed, then, that acceptance is an essential pre-step in facilitating learning from mistakes. Therefore, in this context, the applied proxy seems to be justified.

8. Conclusion

Study findings exposed that the permanent implementation of the change in working methods (e.g., working in the virtual space) is problematic even in the group of knowledge workers. So, good management practice requires long-run perspective attention to implement any change in working methods perfectly, especially those changes that oppose employees' mindsets. This study exposed that even if those employees are seen as "intelligent," they may face problems with change adaptability if the change is firmly out of their mindsets. This is probably because attitudes and habits strongly influence our behavior regardless of our level of intelligence (but this should be verified by further studies). Furthermore, the dynamic approach presented in this study exposes that the implementation changes that root far from mindsets may take longer than if the mindset and the changing character are in line. Therefore, this dynamic approach justifies the long-run perspective of the change implementation: change implementation takes time and requires patience. Fixed to quick success mindsets can easily lead to failure of any change implementation today, especially those which are rooted in mindset technological vs. non-technological.

Adaptation to technology-dominated virtual workspaces must continue, even if this is problematic for non-technological mindsets; abandoning this idea will only make the inevitable transformation longer and more challenging. Collective intelligence creation requires inclusion and patience instead of exclusion of those who face problems or abandonment of change when facing implementation problems rooted in mindsets.

References

- Altebarmakian, M. and Alterman, R. (2019), "Cohesion in online environments", *International Journal of Computer-Supported Collaborative Learning*, Vol. 14, pp. 443-465.
- Bligh, M.C., Kohles, J.C. and Yan, Q. (2018), "Leading and Learning to Change: The Role of Leadership Style and Mindset in Error Learning and Organizational Change", *Journal of Change Management*, Vol. 18 No. 2, pp. 116-141.

- Borges, R. and Quintas, C.A. (2020), "Understanding the individual's reactions to the organizational change: a multidimensional approach", *Journal of Organizational Change Management*, Vol. 33 No. 5, pp. 667-681.
- Brougham, D. and Haar, J. (2018), "Smart Technology, Artificial Intelligence, Robotics, and Algorithms (STARA): Employees' perceptions of our future workplace", *Journal of Management and Organization*, Vol. 24 No. 2, pp. 239-257.
- Campana, K. and Agarwal, N. (2019), "The landscape of research on learning in low-tech environments", *Information and Learning Sciences*, Vol. 120 No. 11/12, pp. 687-703. <https://doi.org/10.1108/ILS-10-2019-0103>
- Choi, W. and Jacobs, R.L. (2011), "Influences of formal learning, personal learning orientation, and supportive learning environment on informal learning", *Human Resource Development Quarterly*, Vol. 22 No. 3, pp. 239-257.
- Choi, W., Noe, R. and Cho, Y. (2019) "What is responsible for the psychological capital-job performance relationship? An examination of the role of informal learning and person-environment fit", *Journal of Managerial Psychology*, Vol. 35 No. 1, pp. 28-41.
- Eraut, M. (2004), "Informal learning in the workplace", *Studies in Continuing Education*, Vol. 26 No. 2, pp. 247-273.
- Fukuzawa, S. and Cahn, J. (2019), "Technology in problem-based learning: Helpful or hindrance?", *International Journal of Information and Learning Technology*, Vol. 36 No. 1, pp. 66-76. <https://doi.org/10.1108/IJILT-12-2017-0123>
- Goswami, M. (2019), "Developing social intelligence among employees for effectively managing organizational change", *Development and Learning in Organizations*, Vol. 34 No. 4, pp. 13-15.
- Griffin, M.A., Rafferty, A.E. and Mason, C.M. (2004), "Who started this? Investigating different sources of organizational change", *Journal of Business and Psychology*, Vol. 18 No. 4, pp. 555-570.
- Hair, J.F., Anderson, R.E., Babin, B.J. and Black, W.C. (2010), *Multivariate data analysis: A global perspective*, Upper Saddle River, NJ: Pearson.
- Hayes, A. (2018), *Introduction to mediation, moderation and conditional process analysis: A regression-based approach*, New York, NY: Guilford Press.
- Hayes, C. and Graham, Y. (2019), "Social interactivity as driver and digital technology as vehicle: Facilitating affective domain learning for undergraduates", *Higher Education, Skills and Work-Based Learning*, Vol. 10 No. 2, pp. 313-324.
- Hoe, S.L. (2019), "Digitalization in practice: the fifth discipline advantage", *The Learning Organization*, Vol. 27 No. 1, pp. 54-64.
- Huda, M. (2019), "Empowering application strategy in the technology adoption: Insights from professional and ethical engagement", *Journal of Science and Technology Policy Management*, Vol. 10 No. 1, pp. 172-192.
- Järvelä, S. and Rosé, C.P. (2020), "Advocating for group interaction in the age of COVID-19", *International Journal of Computer-Supported Collaborative Learning*, Vol. 15, pp. 143-147. <https://doi.org/10.1007/s11412-020-09324-4>
- Klamar, A., Horvath, D., Keith, N. and Frese, M. (2022), "Inducing Error Management Culture – Evidence From Experimental Team Studies", *Frontiers in Psychology*.
- Kmiecik, R. (2019), "Improving SME performance through organizational memory: The role of open-mindedness culture", *Journal of Organizational Change Management*, Vol. 32 No. 4, pp. 473-491. <https://doi.org/10.1108/JOCM-01-2019-0003>
- Kucharska, W. and Bedford, D.A.D. (2020), "Love your mistakes!—They help you adapt to change. How do knowledge, collaboration, and learning culture foster organizational intelligence?", *Journal of Organizational Change Management*. <https://doi.org/10.1108/JOCM-02-2020-0052>
- Kucharska, W. and Bedford, D.A.D. (2023a), *The Cultures of Knowledge Organizations: Knowledge, Learning, Collaboration (KLC)*, Emerald.
- Kucharska, W. and Bedford, D.A.D. (2023b), "The KLC Cultures, Tacit Knowledge, and Trust Contribution to Organizational Intelligence Activation", In *Proceedings of the 24th European Conference on Knowledge Management, ECKM23*, September, Lisbon, Portugal.
- Kucharska, W. and Erickson, G.S. (2023a), "Tacit knowledge acquisition & sharing, and its influence on innovations: A Polish/US cross-country study", *International Journal of Information Management*, Vol. 71, 102647. <https://doi.org/10.1016/j.iinfomgt.2023.102647>
- Kucharska, W. and Erickson, G.S. (2023b), "A multi-industry and cross-country comparison of technology contribution to formal and informal knowledge sharing processes for innovativeness," *Knowledge and Process Management*. <https://doi.org/10.1002/kpm.1755>
- Kucharska, W. and Erickson, G.S. (2019), "The influence of IT-competency dimensions on job satisfaction, knowledge sharing and performance across industries," *VINE Journal of Information and Knowledge Management Systems*. <https://doi.org/10.1108/VJKMS-06-2019-0098>
- Lucena Barbosa, F. and Borges-Andrade, J.E. (2022), "Informal learning behaviors, interaction and workplace autonomy and readiness to learn", *Journal of Workplace Learning*, Vol. 34 No. 4, pp. 388-402.
- Maes, G. and Van Hootegem, G. (2019), "A systems model of organizational change", *Journal of Organizational Change Management*, Vol. 32 No. 7, pp. 725-738. <https://doi.org/10.1108/JOCM-07-2017-0268>
- Papageorgiou, G. and Demetriou, G. (2019), "Investigating learning and diffusion strategies for sustainable mobility", *Smart and Sustainable Built Environment*, Vol. 9 No. 1, pp. 1-16.
- Podsakoff, P.M. and Organ, D. (1986), "Self-reports in organizational research: Problems and prospects", *Journal of Management*, Vol. 12 No. 4, pp. 531-544.
- Prestes Joly, M., Teixeira, J.G., Patrício, L. and Sangiorgi, D. (2019), "Leveraging service design as a multidisciplinary approach to service innovation", *Journal of Service Management*, Vol. 30 No. 6, pp. 681-715.

- Ringberg, T., Reihlen, M., and Ryden, P. (2019), "The technology-mindset interactions: Leading to incremental, radical or revolutionary innovations", *Industrial Marketing Management*, Vol. 79, pp. 102-113.
- Schweighofer, P., Weitlaner, D., Ebner, M. and Rothe, H. (2019), "Influential factors for technology-enhanced learning: Professionals' views", *Journal of Research in Innovative Teaching and Learning*, Vol. 12 No. 3, pp. 268–294.
- Shamsuddoha, M. and Woodside, A.G. (2022), "Achieving radical process innovations by applying technology-mindset transformations via second-order system-dynamics engineering", *Journal of Business Research*, Vol. 147, 37-48.
- Statista.com. (2019), These are the industries that work from home. Retrieved from <https://www.statista.com/chart/19492/working-from-home/>
- Swain, D., Jena, L.K., Dash, S.S. and Yadav, R.S. (2021), "Motivation to learn, mobile learning and online learning climate: moderating role of learner interaction", *European Journal of Training and Development*. <https://doi.org/10.1108/EJTD-06-2021-0077>
- Thomas, D. and Brown, J.S. (2011), *A new culture of learning: Cultivating the imagination for a world of constant change*, Lexington, KY: CreateSpace.
- Treasure-Jones, T., Sarigianni, C., Maier, R., Santos, P. and Dewey, R. (2019), "Scaffolded contributions, active meetings and scaled engagement: How technology shapes informal learning practices in healthcare SME networks", *Computers in Human Behavior*, Vol. 95, pp. 1–13. <https://doi.org/10.1016/j.chb.2018.12.039>
- Watad, M. (2019), "Organizational learning and change: Can they coexist?" *Business Process Management Journal*, Vol. 25 No. 5, pp. 1070–1084. <https://doi.org/10.1108/BPMJ-12-2016-0240>
- Wickramasinghe, V. and Ramanathan, U. (2022), "Workplace learning experienced by employees in information technology-enabled work environments – a developing country experiences", *Journal of Workplace Learning*, Vol. 34 No. 4, pp. 352-372.
- Zhou, D., Kautonen, M., Wang, H. and Wang, L. (2017), "How to interact with knowledge-intensive business services: A multiple case study of small and medium manufacturing enterprises in China", *Journal of Management and Organization*, Vol. 23 No. 2, pp. 297–318. <https://doi.org/10.1017/jmo.2016.23>

Appendix 1: Scales and Their Reliabilities

Scales	mean/SD (composite v.)	Reliability
"Mistakes acceptance" dimension of constant learning culture (MA) people know that mistakes are a learning consequence and tolerate them to a certain point most people freely declare mistakes we discuss problems openly without blaming mistakes are tolerated and treated as learning opportunities	*5.13/1.42 **4.99/1.56 ***4.89/1.47	*Cronbach's $\alpha = .85$ ** Cronbach's $\alpha = .83$ *** Cronbach's $\alpha = .84$
Personal change adaptability (CHA) I am flexible to changes I can adjust to changes I adapt to changes easily I am used to changes	*5.67/1.1 **5.87/1.49 ***5.75/1.51	*Cronbach's $\alpha = .88$ ** Cronbach's $\alpha = .86$ *** Cronbach's $\alpha = .86$

Note: * 2019; ** 2021; ***2022; scales source Kucharska and Bedford, (2020)

The Local Labour Market as a Focus of Place Marketing

Lenka Labudová¹, Denisa Jánošová¹ and Zbigniew Widera²

¹University of Ss. Cyril and Methodius in Trnava, Faculty of Mass Media Communicationm Trnava, Slovakia

²Uniwersytet Ekonomiczny w Katowicach, Department of Market and Marketing Research, Katowice, Poland

lenka.labudova@ucm.sk

denisa.janosova@ucm.sk

zbigniew.widera@ue.katowice.pl

Abstract: Analysing the use of place marketing, in which the labour market is treated as a territorial sub-product, both in the scientific literature and in local government activities, a significant deficiency is to be found. Scientific studies, concentrating on place marketing, point out that its area of interest includes workplaces, but there is little development of this issue. The question arises whether local labour markets should be treated as a territorial product? In the opinion of the authors, in view of the manpower shortage and changes in demographic processes, this area should be one of the centres of attention of local governments in their development processes, because destabilisation of local labour markets threatens their proper development. The aim of this paper is to provide guidelines concerning place marketing in local governments, the product of which is the local labour market. The value of the study and the recommendations derived from it is based on providing a new perspective on the process of place marketing, taking into account an important element for the functioning of local governments' resources, which is the labour market. The research results emphasize the importance of taking a comprehensive approach to place marketing, especially when it comes to the labor market. Instead of treating the labor market as a minor part, local governments should recognize its significance in a holistic manner. The study also highlights the need to learn from marketing practices in economic sectors and how they can enhance local government development. However, it's worth noting that political divisions can hinder marketing efforts, so involving various stakeholders and considering potential drawbacks is essential. Local governments should be involved in creating conditions for the development of their labour markets, and place marketing can be an appropriate tool for this purpose. Designing marketing activities should help to adjust the territorial offer to the needs of potential target groups of customers. Marketing activities towards territorial products are included in the marketing management of local governments, understood as a process of managing a settlement unit with the use of marketing concepts. The implementation of the place marketing concept in management practice is a response to the dynamics of change in the areas where local governments are forced to compete.

Keywords: Place marketing, Labour market, Government, City management

1. Literature Background

In the strategic dimension, with regard to competitiveness processes, local governments will be increasingly forced to implement marketing by transferring techniques, tools and methodology known from the economic market to their own actions. By tailoring them to their specifics, for the purpose of growth, local governments emphasise their uniqueness. In the case of the local labour market as a territorial sub-product, its role is to support its attractiveness by other qualities of the place where it is present: natural qualities, infrastructure, level of education, etc. Another reinforcement is the positive participation of stakeholders-residents of the area in integration processes. Their positive energy, mental disposition but also properly used expertise (Eletxigeraa et al., 2018).

Operating in a globalisation condition requires the ability to respond to new challenges. One of them is to perceive the local labour market as a product for which buyers are sought. The new dimension of the market presence of local governments in the conditions of globalisation carries the necessity to bring the provider as close as possible to the customers. The best possible identification of the social, cultural, political and economic relationships existing in the area. In this context, skillful marketing communication is of particular importance. Implementing the latest communication technologies makes marketing activities much easier. Place branding suggests that places, cities, regions or countries could be considered as brands, as long as perceived so

(Sadhasivam, Begum, 2018). Modern ICT tools implemented in the marketing process not only make it possible to collect data, analyse changes, identify competition and trends but also allow for unlimited territorial real-time distribution of the content. The ability to systematically analyse data is especially important in the context of increasingly limiting resources and rising costs of acquiring them. Fast data collection makes marketing communications flexible, and enables changes in strategy execution (pkn.pl, 2020). It also allows local government residents to participate in the planning and execution of marketing activities.

It is crucial for local government managers to understand that "the global economy is becoming a symbolic spatial economy, with territories that compete aggressively through various channels across space and time

and space and time compression (the apparent destruction of space by time as a result of a wide range of media and communication technologies) as speed reconfigures many of the assumed relationships between social space and physical distribution" (pkn.pl, 2020). Public policies, implemented in the management processes in local and regional areas must consistently and in a modern way contribute to the strengthening and development of local governments, the professionalisation of their management, innovative actions making the use of the value of their territorial identity and attractiveness.

If we want to provide a knowledge base for future research. A lot of authors agree that this field of research has not yet reached a very advanced stage. It lacks generally accepted definitions, agreed-upon classifications, and a general research plan with an overview of the existing research and issues to be clarified (with research models, variables). The literature on place marketing and branding:

- suffers from a lack of conceptual clarity, diverging definitions and a weak theoretical foundation, which means it addresses a very broad range of research topics;
- makes few references to classic marketing literature, which, for its part, provides clear definitions of marketing and branding;
- lacks empirical evidence and explanatory articles, meaning that the numerous hypotheses concerning its effects on attractiveness remain unsubstantiated;
- is disconnected from the political and institutional aspects of locations, although this context is important when it comes to public management;
- offers pride of place to the rhetoric of consultants by including many prescriptive publications that aim to share best practices (Vuignier, 2017).

A place brand is a sum of the networks of association in the consumer's mind developed from the visual, verbal and behavioral expression of a place (Balakrishnan, 2015). The current perception of the purpose of place marketing aimed at promoting a given area as a place for investments and tourist services is subject to change not only in the case of the increasing awareness that the abandonment of marketing activities reduces the chances for development, but it also stimulates thinking about the need to seek the advantages of own resources, which, as a new product in the marketing concept, can be of interest to buyers. *The most promising approach to place marketing is the relational one that can help build an extensive network of marketing communications* (Komarov, 2020). The labour market as a product, increasingly requires not only formal promotion, but even intervention in view of the threat of its destabilisation. Even more so when the effects of demographic changes, overlooked by the political authorities, can threaten the sustainable development of a local government. Place branding is a promotional strategy that includes all activities that increase the attractiveness of an area as a place for working, living, and spending free time (Messely et. al, 2015).

According to Nadica Jovanovska Boshkovska and Klime Poposki (2018), the requirement of our times is the necessity to create a proactive approach to public policies. This should result in building a strategic perspective, a proactive approach to public policies. The ability to predict the future of an area, the growth of professional management capacity to cope with structural and cyclical changes. Consistent building of strategic management of the relational dimension of an area, systematic actions towards effective relationships with different territorial levels. Making the most of an area's resources. Making use of creativity and innovation of the stakeholders. Making use of the value of the environment and building relationships with partners. An open approach to working with the private sector, building territorial competitive advantage with them. The brand of the place and its effectiveness stems from the identity of the place and is linked to the rooted core values of the place (Ali, Khafaji, 2022).

An important aspect of place marketing is searching for uniqueness and raising cultural values, which are an important element of the integration with employees from abroad. Pointing out the values of the region by affirming cultural richness. Emphasising developmental success, economic and social stability. "Otherwise, any such failure will undermine the ability of public policy to respond to the specific features that lead to an areas 'exit and oblivion' from global movements" (pkn.pl, 2020).

2. Research

In this chapter we present one part of the research results. The research was conducted in three stages. In the first stage the analysis of Polish and foreign literature was conducted, as well as the analysis of secondary

sources: national and European Union documents, reports and analyses concerning the labour market, activities of District Employment Offices, institutions providing services on the labour market in local governments. Afterwards, the second stage of the research was implemented, the aim of which was to diagnose whether the studied local governments have developed place marketing strategies, in which the product is the local labour market. The websites of District Employment Offices were mainly analysed in detail, which are the main instrument for organising the labour market and communication processes in terms of communication activities of local governments. At the same time, the development strategies of individual local governments were analysed. We wanted to answer the question in what form the surveyed local governments conduct marketing activities in terms of the labour market. Do they result from the strategies developed? This stage ended with a positive verification of the hypothesis.

The third stage of the research process served to develop indications that can be taken into account in the development of place marketing strategies of local governments taking into account their labour market, and at the same time to identify the main factors affecting the lack of strategic actions. This stage of the research process applied the method of unstructured IDIs with experts speaking on the need for marketing activities, their characteristics and the indications for this process. The quantitative key for the selection of experts was adopted in relation to the size of local governments and the number of inhabitants of the members of the GMG, and as follows: for cities over 100,000 population – 9 experts; for cities with 50,000-100,000 population – 5 experts; for the remaining metropolitan cities – 11 experts. As part of the study, 25 individual in-depth interviews were conducted. The experts were selected from a group of academics, economic and social organisations living in the communes of Silesian Metropolis. The interviews provided comprehensive research material, allowing the examined issue to be described from various perspectives.

In this stage of the research, the experts were asked what might be the reasons for the lack of marketing strategies focusing on the labour market in local governments and whether local governments should have a place marketing strategy focusing on the local labour market? The experts' answers are presented in tables 1 and 2.

Table 1: Main mistakes in the marketing process in the area of self-government in the opinion of experts

Compliance in the indication of the factor in the expert group	Description of miscommunication
21	Lack of understanding of the importance of marketing that should support management processes in local governments, which is a common practice.
16	Management of local governments is mainly based on the administration of their resources and the legislator has not introduced the term "marketing" into the field of activity of institutions operating on the labour market.
18	Local governments hardly work with other local governments, including foreign governments, to strategically evolve resource management.
23	Interest in the local labour market is characterised by thinking that it is exclusively entrepreneurs' problem.
17	Local governments do not have development strategies that would be firmly rooted in the reality of their operation.
22	Local governments do not hire marketing professionals.
23	Marketing strategies in local governments are identified as promotion strategies or promotional activities without being embedded in strategic thinking.

Note. Own IDI research

The main errors identified by experts encompass local government marketing. Firstly, 21 experts highlight a common oversight: marketing's core role is often ignored, hindering local governments from benefiting from strategic marketing's potential for perception enhancement, engagement, and resource allocation. Secondly, 16 experts underscore that local government management predominantly focuses on administration and resource allocation, disregarding marketing integration. This limits effective communication and positive community relationships. Collaboration gaps, emphasized by 18 experts, hinder resource management evolution. Failing to pool resources, ideas, and practices impedes innovative solutions and community growth.

Ignoring local governments' role in the labor market, highlighted by 23 experts, curbs economic development potential. Lack of well-grounded strategies (17 experts) leads to misaligned efforts and ineffective resource

allocation. Surprisingly, 22 experts note local governments' failure to hire marketing professionals. This limits effective campaigns, public relations, and community communication. Moreover, 23 experts point out the misconception of equating marketing strategies to mere promotion. This undermines marketing's potential for transformative change. In conclusion, 25 experts identify key mistakes in local government marketing. Addressing the lack of marketing recognition, collaboration gaps, misconceptions, and hiring oversight is vital for fostering community-oriented governance and effective resource management.

The respondents were asked how they perceived the need for local governments to take action consisting in developing a marketing strategy for their labour market. The responses are presented in Table 2.

Table 2: Need for developed strategy

Number of experts participating in the study	Local governments should have a developed strategy	Local governments do not need to have a developed strategy and their marketing activities should meet the current needs
25	18	7

Note. Own IDI research

When asked about the necessity of local governments developing a marketing strategy for their labor market, the insights from the same 25 experts were divided into two main perspectives. A majority of 18 experts strongly advocated for the implementation of a well-structured marketing strategy by local governments. They emphasized that having a developed strategy is imperative for effective resource management, community engagement, and long-term growth. These experts recognized that a comprehensive marketing strategy can align the goals of local governments with the needs and aspirations of their communities, fostering economic development and job creation.

On the other hand, 7 experts held the view that local governments do not necessarily need a fully developed marketing strategy. They argued that marketing activities should be flexible and adaptable to meet the ever-evolving current needs of the labor market and the community. This perspective suggests that an overly rigid strategy might hinder the ability to respond to dynamic changes and shifts in the local economic landscape.

In summary, the opinions of the 25 experts were divided between those who emphasized the significance of a developed marketing strategy for local governments, citing its potential to drive effective governance and community progress, and those who favored a more flexible approach, highlighting the importance of staying agile to address immediate needs. These contrasting perspectives highlight the nuanced nature of marketing strategy development in the context of local government, suggesting that a balanced approach might be the most effective way forward.

As a consequence, experts were asked about the validity and the main determinants of a strategy in which the local labour market is offered. The results are presented in Table 3.

Table 3: Key factors of a marketing strategy

Compliance in the indication of the factor in the expert group	Description of factors and tools used in marketing
25	Development and implementation of a marketing strategy organises the activities carried out by local governments in this area.
22	Labour market is an important part of a local government's operation and can be an added value to its competitiveness in the market.
21	Understanding from the political authorities of the local government is crucial.
25	Marketing process requires professional employees.
17	Actions that invite employees from outside the commune and especially from abroad require public consultations.
25	Local government, by conducting marketing activities, assists entrepreneurs who should participate in this process.
21	Defining a clear management structure is necessary.

25	Marketing communication is an important factor.
19	Local governments should work together, especially those whose labour market is not large and which are adjacent to each other.
18	In the absence of a strategy, marketing activities should be based on annual action plans.
25	Undertaking a marketing process requires careful research of needs.
20	Prerequisite for undertaking a structured process is to understand the benefits of place marketing.
23	Organisation of the marketing process should take into account the best marketing activity practices of economic organisations.
23	In the conditions of globalisation, the labour market is subject to dynamic competitiveness processes, which provokes the professionalisation of management.

Note. Own IDI research

A unanimous agreement among experts highlights the pivotal role of developing and implementing a strategy to organize local government endeavors. This strategy acts as a guiding framework, enhancing efficiency and effectiveness. Moreover, 22 experts emphasized the significance of the labor market in local government operations. Nurturing a vibrant labor market boosts local competitiveness, attracting talent, driving economic growth, and fostering community development. Input from 21 experts stressed garnering support from local political authorities as vital for coherent strategy execution. Professional expertise emerged as crucial, with 25 experts emphasizing its role in effective marketing processes. Transparency and community involvement, endorsed by 17 experts, enhance strategy acceptance. Collaboration with entrepreneurs is highlighted, amplifying the local government's role in economic growth. Clear organizational structures, underscored by 21 experts, ensure seamless strategy execution. Communication emerged as pivotal for all 25 experts, conveying messages effectively. Collaboration among local governments, especially with smaller labor markets, was affirmed by 19 experts. Lastly, unanimous agreement on meticulous research underscores tailored strategy development. In conclusion, experts agree on a multifaceted approach for an effective local labor market strategy. Coordinated efforts, political alignment, professional staff, community engagement, clear organization, strategic communication, collaboration, and research-backed initiatives collectively bolster local governments and foster economic vitality.

3. Discussion

Changing conditions on the labour markets require rising to new challenges. When it comes to the issue of local labour markets raised in local government bodies, it seems that not enough thought has been given to attracting investors to local governments. On the other hand, activities on the labour market, limited to employment support programmes and formal matters, are costly and result from the current management style. The management activities that need to be undertaken should be in line with the idea of strategic activity in local governments, which is a method of management focused on the long-term development of a commune. It is based on rational principles of managing own financial resources and those obtained from external sources. This concept should be complemented with the method of strategic and marketing activities, which is a desirable method of local government management in the conditions of market economy (Ziolkowski, 2015) reforming administrative management.

The necessity to undertake well-considered strategic activities in the scope of supporting the development of labour markets in local governments with the use of marketing seems to be a necessary condition of their development, which includes unconditionally stable labour market.

The marketing activity, with a designated offeror and recipient of the offer, should be in the form of systematic planning and, as a result, the implementation of activities and their control. The implementation of strategies and tactical elements aimed at satisfying customer needs appropriately. Bringing about an effective exchange transaction in such a way that the local labour market is stable, can develop and could serve local government to carry out its mission of the development of local government in parallel with the development of its inhabitants and satisfying their needs. In local governments where one of the determinants of development is a stable labour market, it can constitute a value factor in the process of competing with other local governments. Courage and vision are needed, as well as new ideas for place marketing to provide local governments with tools

to carry out the management process. As a result of the research process, the following recommendations were made for place marketing, focusing on a labour market:

- The place marketing approach of treating the labour market as a territorial sub-product shall be understood as a holistic issue.
- In place marketing, it is necessary to draw on the experience of marketing applied to the economic area.
- The marketing strategy shall add value to the development of local government.
- The lack of political unity and cohesion shall be a major obstacle to marketing in this area.
- In developing marketing activities, the needs of as many stakeholders as possible should be taken into account.
- The marketing activities undertaken in local areas should learn from the experience of marketing activities undertaken by other local governments.
- One of the key elements is marketing communication. Since marketing communication is global, marketing practices should use modern communication tools.
- A marketing strategy that plans to measure and monitor results shall be more effective than setting out activities in this area without these elements.
- It is necessary to define a vision, mission, strategic goals and motivational guidelines for implementers and stakeholders.
- In place marketing, a management group is necessary as a planning and coordinating body.
- For marketing activities to be effective, a SWOT analysis is essential and should be kept up to date.
- Analysis of competition is necessary.
- It is advisable to develop foresight in a specific time perspective for a specific area.
- For each local government or their broader cooperation, it is essential to understand the unique attraction features that will differentiate it from its competitors.
- The decision to implement the process shall be embedded in the responsibilities of top management.
- The commitment to implementation should involve most levels of the management structure and the maximum number of stakeholders in the local government.
- The identity of the area in which the strategy is developed and its image are the foundation of marketing activities.
- For marketing activities to be successful, it is necessary for the main actors in local governments to agree on common goals and the resulting strategy.
- It is essential to anticipate the negative effects of marketing activities in order to counteract them.
- Successful marketing practices require professional, talented leadership. Without it, the commune shall not be able to use its resources and development opportunities.
- Key measures in the area of labour market focused marketing, in the area of immigrant related activities, require the approval of the inhabitants of the local government.
- Marketing to attract workers from outside the commune shall be integrated in the integration strategy.

The recommendations formulated in the study are based on the findings of the empirical research. These were formulated after the research. The results of the research indicated a lack of strategic thinking by local governments in this area - a typical approach to manpower shortages by considering them to be a problem of employers. Low activity of political authorities in a situation when the local labour market not only has a direct impact on the living standards of inhabitants, the development of local governments or the social care system. Understanding of the managers of local governments that targeting foreign workers is a different activity than the one undertaken so far in the field of local labour market promotion targeted mainly at people living in the area governed by the local government. It is based on a marketing concept taking into account the features attributed to the specificity of place marketing.

Increasing manpower shortage seen in many European countries and problems with the integration of foreigners require well-considered, professional actions managed by talented managers, engaged by political authorities. The generalisation of the proposed factors to the activities of the management of local governments can occur after taking into account the strength of their resources, the complex specificity of local governments and their environment.

4. Conclusion

This article deals with theory building rather than theory testing. The considerations have been supported by expert opinions to give credibility to the conclusions derived. The authors are aware of the need for caution in drawing conclusions. The rationale for this study was the importance of labour market issues in the development processes of local governments, the low interest of researchers and practitioners in the application of place marketing, the product of which is the local labour market. Problems of manpower shortages can be seen all over Europe and are systematically increasing. Economic organisations, especially corporations, are increasingly active in directing their offers to foreigners. Their interest increases when the non-salary benefits in the area in which they intend to stay will secure their needs. Differences in the conditions created by different countries affect their effectiveness in the process of competing in the global labour market.

Conclusions and discussion on the results of the conducted research allow us to propose some interesting, concerning the theory of place marketing, research issues, which are illustrated by the following questions of the research subjects.

- Should place marketing be implemented by local governments and how?
- How should the labour market be described as a territorial sub-product?
- Why do local governments build their support strategies as promotion strategies rather than marketing strategies?
- Why do not policies of local governments perceive the labour market as a factor in their competitiveness?
- How should effective marketing activities be carried out in order to attract foreign workers with the most suitable characteristics for the local labour markets?
- Is a partnership between communes and the private sector in the development of a marketing strategy possible, and how should it fulfil the demand for transparency?
- How should the national migration strategy affect local governments, and to what extent should they have decision-making sovereignty?
- What features of the local labour market influence the success of place marketing practices the most?
- What value does the local government's brand have in the marketing process, and how does it determine it?
- Where are the boundaries of necessary action between the local government and the employer?
- What should be the model for creating non-working conditions for the recruited workers in the local labour market?
- How should the marketing strategy for attracting foreign workers cooperate with the integration strategy?
- Do local governments have immigration strategies? What are their main assumptions?
- Should place marketing strategies on the labour market be developed separately for each local government, or should they be prepared within the framework of mutual cooperation?

An opportunity, however, is a well-considered in principle and consequence strategic approach to the problem of labour markets, and in view of the growing competition for workers in many European countries, going beyond the current patterns of activity.

Acknowledgement

This contribution is a partial result of the project Vega no.1/0606/21 Change in preferences in buying behaviour of consumers in the context of the dynamics of marketing communication tools development.

References

- Ali, N.H., & Al-Khafaji, S.J. (2022). Branding as an identity of place in contemporary cities. *International journal of health sciences*.
- Balakrishnan, M.S. (2015). Revitalizing Forgotten Place Brands through Touring Consumption: The Case of The Old London Underground Company.
- Eletxigerraa, A., Barrutiabc, J. M., & Echebarriaad, C. (2018). Place marketing examined through a service-dominant logic lens: A review. *Journal of Destination Marketing & Management*, 9, 72-84.
- Jovanovska Boshkovska, N., Poposki K., Territorial marketing strategy – way ahead for economic development, DOI 10.20544/HORIZONS.A.23.2.18.P16., Available online - <https://uklo.edu.mk/wp-content/uploads/2021/11/p16.pdf>
- Jovanovska Boshkovska, N., Poposki, K. (2021). Territorial marketing strategy – way ahead for economic development. Retrieved from <https://uklo.edu.mk/wp-content/uploads/2021/11/p16.pdf>

- Komarov, M. (2020). Marketing communications in place promotion. *Regional Economics: Theory and Practice*.
- Messely, L., Dessein, J., & Rogge, E. (2015). Behind the Scenes of Place Branding: Unraveling the Selective Nature of Regional Branding. *Tijdschrift voor economische en sociale geografie*, 106, 291-306.
- Polski Komitet Normalizacyjny. (2022). SMART CITIES. Retrieved from <https://www.pkn.pl/smart-cities>
- Sadhasivam, D.P., & Begum, N.F. (2018). A Study on Place Brand of Coimbatore among the Entrepreneurs in Small and Medium Scale Industries Using Structural Equation Modeling.
- Vuignier, R. (2017). Place branding & place marketing 1976–2016: A multidisciplinary literature review. *International Review on Public and Nonprofit Marketing*, 14, 447-473.
- Ziółkowski, M. (2015). Strategiczne zarządzanie rozwojem gminy. *Ruch prawniczy, ekonomiczny i socjologiczny*, 77(1), 151.

Determinants of Risks Disclosure in Non-Financial Companies: Evidence From the Portuguese Capital Market

Kátia Lemos and Filipa Pacheco

Research Center on Accounting and Taxation, Management School, Polytechnic Institute of Cávado and Ave, Barcelos, Portugal

klemos@ipca.pt

filipamariapacheco96@gmail.com

Abstract: The present study aims to determine the level of disclosure about financial risks in Portuguese non-financial companies and to identify the determinants of the level of disclosure. To carry out this study, the research methodology used was the content analysis of the reports and accounts, for the period 2017, of 40 non-financial companies listed on Euronext Lisbon, using a disclosure index for financial risks, created based on the requirements contained in the International Financial Reporting Standard No. 7 - Financial Instruments: Disclosures. After the content analysis, to identify the determining factors of disclosure level, a linear regression model was built to relate certain characteristics of the companies with the disclosure level presented. It was possible to conclude that the companies under study have an average disclosure level of about 50% of the requirements contained in IFRS 7 and that the size of companies and the concentration of capital significantly and positively influence the level of disclosure about financial risks. Indebtedness was also a determinant factor, but with a negative sign, being an uncommon result in relation to most other studies.

Keywords: Financial risks, Disclosure level, Disclosure index, Non-financial companies

1. Introduction

The events that marked the most recent international financial crisis have highlighted the importance of financial information transparency, especially regarding the risks incurred by companies and the strategies adopted to mitigate and manage those risks. Therefore, companies sought solutions to improve their financial reports and one of those solutions is the disclosure of information to shareholders (Salehi et al., 2017), who need reliable and complete information to make their decisions. Disclosure about risks and the strategies adopted in their management helps investors to assess companies' risks and predict their market value (Abdullah et al., 2017), reducing information asymmetries and increasing market liquidity (Elshandidy & Neri, 2015).

The main objective of this study is to identify the determinants of financial risks disclosure in Portuguese non-financial companies. Assuming that risks are useful to users of the company's management reports and accounts, as evidenced in several studies (Beretta & Bozzolan, 2004; Linsley & Shrivs, 2006; Hassan, 2009; Abraham & Cox, 2007 and Amran et al., 2009) it is intended to analyze the level of disclosure about companies' risks and subsequently to identify the determining factors associated with this level of disclosure. For this, a content analysis was carried out on the reports and accounts, for the period 2017, of non-financial companies listed on Euronext Lisbon. To measure the level of disclosure by the companies under study, a disclosure index for financial risks was created, based on the requirements contained in International Financial Reporting Standard (IFRS) 7 - Financial Instruments: Disclosures.

Regarding the determinants of the level of disclosure, based on the postulates of Agency, Signaling, Stakeholders and Legitimacy Theories, we sought to verify whether certain characteristics of the companies have any influence on the level of disclosure about financial risks. Thus, also considering the results obtained by other authors, in previous studies, the influence of certain factors was analyzed, having resorted to the construction of a linear regression model to relate certain characteristics of the companies with the level of disclosure presented.

The results of this paper may contribute to the accounting regulatory bodies, regarding potential enforcement mechanisms, in case of non-compliance with accounting standards, especially those related to financial risks disclosure.

To carry out the defined objectives, after this introduction, this paper is divided into 4 sections. In section 2 below, a brief literature review is carried out and the research hypotheses are defined. Section 3 presents the research design, by defining the sample and describing the collection and treatment of the data. In section 4 the results obtained are presented and discussed and, finally, in section 5, the main conclusions, limitations of the study and suggestions for future research are presented.

2. Literature Review and Hypotheses Development

Taking into account the importance of risks disclosure to the various stakeholders, several authors have investigated the disclosure of information about risks (Beretta & Bozzolan, 2004; Adam-Muller & Erkens, 2020; Shivaani & Agarwal, 2020) seeking to identify the factors that determine the level of disclosure (Linsley & Shrives, 2006; Abraham & Cox, 2007; Deumes & Knechel, 2008; Hassan, 2009; Amran et al., 2009; Dobler et al., 2011; Oliveira et al., 2011; Elzahr & Hussainey, 2012; Campbell et al., 2014; Madrigal et al., 2015; Malafronte et al., 2016; Ashfaq et al., 2016; Habtoor et al., 2017; Serrasqueiro & Mineiro, 2018; Neifar & Jarboui, 2018; Allini et al., 2020; Abbas et al., 2021; Azevedo et al., 2022). Most studies conclude that the predominant information is qualitative, generic, vague, referring to past events and inadequate to the needs of stakeholders and had identified, as determining factors of the level of disclosure, some characteristics associated with the analyzed companies, such as the size of the company, the level of profitability, the level of indebtedness, among others.

2.1 Size of the Company

There are several studies (Beretta & Bozzolan, 2004; Linsley & Shrives, 2006; Amran et al., 2009; Abraham & Cox, 2007; Dobler et al., 2011; Madrigal et al., 2015; Habtoor et al., 2017; Serrasqueiro & Mineiro, 2018; Neifar & Jarboui, 2018; Azevedo et al., 2022; Mbithi et al., 2022) that prove that there is a relationship between the disclosure about risks and the size of the company.

According to Amran et al. (2009), as the company grows, the number of stakeholders involved also increases. With this increase, the importance and obligation of disclosure becomes greater for the company, as it needs to satisfy the needs of a larger group of people.

The theory of legitimacy also emerges as an explanation for this relationship between the size and disclosure. According to the theories, larger companies usually perform several types of activities, which generate more impact on society (Kongpraiya, 2010). More specifically, the legitimacy theory states that larger companies are also more exposed in society, which means that they must comply more rigorously with disclosure requirements. In this sense, hypothesis H1 was defined in the following terms:

H1: There is a positive relationship between the size of the company and the level of financial risks disclosure.

2.2 Auditor Quality

According to Chalmers and Godfrey (2004), high profile auditing companies are more likely to require high levels of disclosure to maintain their reputation and avoid reputation costs.

Based on the previous premises, the empirical studies by Oliveira et al. (2011), Campbell et al. (2014), Zango et al. (2016), Habtoor et al. (2017), Neifar and Jarboui (2018) as well as Dey et al. (2018) revealed a positive association between risks disclosure and the type of audit firm. On the other hand, the study by Deumes and Knechel (2008) shows a non-association between the auditor and the level of disclosure. That said, hypothesis H2 was defined in the following terms:

H2: There is a positive relationship between the size of the audit firm (BIG4) and the level of financial risks disclosure.

2.3 Profitability

According to Höring and Gründl (2011), low profitability increases the company's perceived risk level in the market and increases public pressure on the entity to provide more information about risks. Elshandidy et al. (2013) also refer that high-profit companies have relatively greater incentives to signal their quality of performance and their ability to manage risks successfully.

Based on the agency's theory, Elzahr and Hussainey (2012) state that managers of companies with high profitability would tend to provide more risk information in the reports, to justify their current performance to shareholders. Based on the theory of legitimacy, we can also say that, for the most profitable companies to maintain their reputation, they will consequently tend to disclose more information, since the non-disclosure can jeopardize their legitimacy.

The empirical evidence on the relationship between profitability and risks disclosure is unclear. However, the studies of Campbell et al. (2014), Elzahr and Hussainey (2012) and Höring and Gründl (2011) find the existence of a negative relationship between profitability and risks disclosure. That said, hypothesis H3 was defined in the following terms:

H3: There is a negative relationship between the entity's profitability and the level of financial risks disclosure.

2.4 Indebtedness

According to the agency's theory, there is a positive relationship between a company's indebtedness and the level of disclosure because the most indebted companies are under pressure from creditors and, to satisfy their needs, they must disclose more information and, in more detail (Jensen & Meckling, 1976).

From a complementary point of view, stakeholder theory and signaling theory also assume that indebted companies are more motivated to provide more risk disclosure to guarantee creditors and stakeholders and signal their ability to manage assets, different risks faced by the company and comply with its obligations (Amran et al., 2009; Habtoor et al., 2017; Foster, 1986; Oliveira et al., 2011).

Based on empirical evidence from studies such as de Oliveira et al. (2011), Deumes and Knechel (2008), Höring and Gründl (2011) and Mbithi et al. (2022), of the existence of a positive association between the level of indebtedness and the level disclosure, the research hypothesis H4 is defined as follows:

H4: There is a positive relationship between indebtedness and the level of financial risks disclosure.

2.5 Capital Concentration

Concentration of capital in a company can affect the level of disclosure, since the more concentrated is the capital, the less likely shareholders are to want to disclose more information. An entity with a more concentrated capital structure, based on agency theory, tends to have less agency costs than an entity whose administrative structure involves people outside the company, due to the separation of ownership and control (Jensen & Meckling, 1976; Deumes & Knechel, 2008). Barako et al. (2006) affirm that a more diffuse capital structure implies a lack of monitoring capacity on the part of shareholders, who may not be a formidable force to influence the company's reporting practices, thus expecting more incentives and higher levels of disclosure.

Despite this, the empirical results of the relationship between capital concentration and the disclosure on risks are quite dispersed. Although, since Abraham and Cox (2007) and Neifar and Jarboui (2018) demonstrated a positive relationship between these two variables, the H5 hypothesis was defined in the following terms:

H5: There is a positive relationship between the concentration of capital and the level of financial risks disclosure.

2.6 Independent Directors

According to Abraham and Cox (2007), as the annual report is prepared by the board of directors, a company board with a greater number of non-executive directors is in a stronger position to meet the preferences of shareholders in terms of responsibility and transparency. In contrast, according to the same authors, independent non-executive directors are, at least in theory, independent from management and a key indicator of the quality of corporate governance. Thus, following the perspective of Abraham and Cox (2007), independent directors can influence the level of disclosure, since they will tend to reduce information asymmetries between managers and shareholders. Oliveira et al. (2011) also add that independent directors have incentives to require the disclosure of more information to balance the levels of risk with their personal reputation.

According to Lopes and Rodrigues (2007), more disclosure can be expected from companies with a higher proportion of independent directors, and less disclosure if the board of directors has a high proportion of non-independent directors, since they have access to privileged information. Thus, based on the conclusions of the studies by Abraham and Cox (2007), Deumes and Knechel (2008), Ashfaq et al. (2016) Neifar and Jarboui (2018), and Mbithi et al. (2022) hypothesis H6 was defined in the following terms:

H6: There is a positive relationship between the percentage of independent directors on the Board of Directors and the level of financial risks disclosure.

2.7 Notoriety

For the authors Darus and Taylor (2009), based on the signaling theory, companies with more quality will use the opportunities they have to, through disclosure, provide signals to the market to reveal their type of quality. In addition to accounting standards obliging companies to disclose about risks, companies themselves end up doing so to maintain their legitimacy in the market.

Like Lemos (2011), who obtained empirical evidence of a positive association between the level of disclosure about derivative instruments and the notoriety of Portuguese companies, the integration in the index of the 20 largest companies of Euronext Lisbon (PSI 20) is used as an indicator of companies' notoriety, and the following research hypothesis 7 is defined:

H7: There is a positive relationship between companies with notoriety and the level of financial risks disclosure.

2.8 Risk Management Committee

According to Al-Hadi et al. (2016), risk management committees benefit companies, improving risk management supervision by the board and anticipating events and trends that could be unavoidable. In addition, risk management committees can devote more time and effort to integrating and managing the various risks across the organization.

Abbas et al. (2021) state that once the organization establishes a Risk Management Committee, Enterprise Risk Management's transparency would become much more detailed.

Abdullah et al. (2017) and Al-Hadi et al. (2016) obtained empirical evidence that companies that have a risk management committee tend to disclose more information about risks and Hasan et al. (2023) proved that risk committee size is positively associated with risk disclosure. That said, hypothesis H8 was defined in the following terms:

H8: There is a positive relationship between the existence of a risk management committee in companies and the level of financial risks disclosure.

3. Research design

3.1 Sample Selection, Collection, and Processing of Data

Since the main objective of this work is to identify the determining factors for the disclosure of information on risks in non-financial companies, the sample used consists of non-financial companies listed on Euronext Lisbon.

Thus, from the list of companies listed on Euronext Lisbon, with a total of 47 companies, 7 companies were excluded, as they are sports limited companies, or financial entities, or entities whose management reports and accounts were not available. That said, 40 companies remain in the sample of this study.

In analyzing the information disclosed, the content analysis technique was used, coding the information collected into a risk disclosure index, whose sum of the items disclosed over the total of items considered results in the risk disclosure index for each company. The source for obtaining the information was the management reports and accounts of each of the companies for the period of 2017.

3.1.1 Dependent variable

Since what we intend to analyze is the level of disclosure about risks, specifically financial risks, a disclosure index was built, considering the information disclosure requirements contained in IFRS 7.

This index consists of 30 items of disclosure and can be divided into 6 main categories:

1. Accounting policies
2. Specific information on risk disclosure
3. Hedging
4. Credit risk
5. Liquidity risk
6. Market risk

The use of these type of indices as a tool to measure the level of disclosure is something that already exists in the literature, such as for example in the studies carried out by Lopes and Rodrigues (2007), Lemos (2011), Barako et al. (2006), Höring and Gründl (2011), Madrigal et al. (2015), Malafronte et al. (2016), Ashfaq et al. (2016), Neifar and Jarbouï (2018), and Adam-Muller & Erkens (2020).

Subsequently, all the management reports and accounts of the companies that make up the sample were collected, and their analysis was carried out. When checking each of the items that make up the disclosure index, each of them was given a weight of 0 or 1, where 0 means that the item is not disclosed and 1 means that the item is disclosed. Thus, after verifying each of the items for each of the companies' reports, the value of the risk

disclosure index per company is obtained through the quotient between the sum of the total items disclosed by the company in question and the total of items that constitute the disclosure index. The higher the value of the index, the higher the level of disclosure presented by the company.

3.1.2 Independent variables

The independent variables used in this study are based on the research hypotheses previously formulated and represent the determinants that we believe influence the level of disclosure about companies' risks, as shown in Table 1, below.

Table 1: Independent variables and expected association

Variable	Determination form	Expected signal	Hypothesis
Size	Total assets logarithm	+	H1
Auditor quality (BIG 4)	Dummy: 0 - not belonging to the Big 4 1 - belonging to the Big 4	+	H2
Profitability (ROA)	Net income / total net assets x 100	-	H3
Indebtedness (IND)	Total liabilities / Equity x 100	+	H4
Capital concentration (CC)	% of the three largest shareholders	+	H5
Independent Directors (ID)	% of independent directors on the board of directors	+	H6
Notoriety (PSI 20)	Dummy: 0 - the shares of the companies do not include the PSI 20 1 - the shares of the companies are included in the PSI 20	+	H7
Risk management committee (RMC)	Dummy: 0 - the company does not have a risk management committee 1 - the company has a risk management committee	+	H8

3.1.3 Regression model

To identify the determinants of the level of disclosure about financial risks, a multiple linear regression model was built, which relates the disclosure index with the characteristics of the companies to be studied, which is presented in table 2 below.

Table 2: Multiple linear regression model

$FRDI = \alpha_0 + \beta_1 SIZE + \beta_2 BIG4 + \beta_3 ROA + \beta_4 IND + \beta_5 CC + \beta_6 ID + \beta_7 PSI20 + \beta_8 RMC + \epsilon_i$

4. Empirical Results and Discussions

This section aims to analyze the association between the hypotheses previously formulated and the dependent variable (financial risks disclosure index- FRDI).

The multiple linear regression model was then estimated. It is important to mention that, due to the lack of information regarding some independent variables, one company was excluded from the sample and, therefore, the multiple linear regression model was estimated for only 39 companies. The method used in this multiple linear regression model was Enter and the results obtained are those shown in table 3, below:

Table 3: Results of the multiple linear regression model

Coefficients						
Model		Nonstandard coefficients		Standardized coefficients	t	Sig.
		B	Standard Error	Beta		
1	(Constant)	-1,225	,437		-2,802	,009
	SIZE	,180	,053	,633	3,389	,002
	BIG4	-,004	,083	-,007	-,054	,958
	ROA	,001	,001	,107	,800	,430
	IND	-,004	,002	-,222	-1,841	,076
	CC	,004	,002	,297	2,323	,027
	ID	,001	,001	,090	,696	,492
	PSI20	,024	,081	,049	,295	,770
	RMG	-,009	,079	-,015	-,113	,911
Model		R	R square	Adjusted square R	Standard error of estimate	
1		,795	,632	,534	,16872	

As can be seen through the analysis of table 3, for a significance level of 5%, the only variables that explain the level of disclosure about financial risks are size and capital concentration (CC). However, for a significance level of 10%, the indebtedness variable (IND) is also explanatory of disclosure index. The remaining variables such as the quality of the auditor, profitability, the percentage of independent directors on the board of directors, the PSI20 and the existence of a risk management committee do not have any relationship with the level of disclosure of financial risks of the companies in the sample.

In this segment, since the variables size and capital concentration show a positive sign, as expected, and prove to be explanatory, hypotheses H1 and H5 can be validated.

As previously mentioned, for a significance level of 10%, the indebtedness also proves to be explanatory of the level of disclosure, but despite this, in the formulation of the research hypotheses, a positive sign was predicted. However, the model presented above, despite proving that this variable influences the level of disclosure about financial risks, estimates a negative sign for this relationship, consequently making the hypotheses H4 unable to be validated.

In short, we were able to verify that the value of the disclosure index on financial risks increases as the size of the company and the concentration of capital also increase and the indebtedness decreases.

Finally, looking at the value R², we can conclude that the estimated model explains 63.2% of the level of disclosure about financial risks of the sample companies.

The results obtained are in line with the results obtained by Beretta and Bozzolan (2004), Linsley and Shrivs (2006), Amran et al. (2009), Abraham and Cox (2007), Dobler et al. (2011), Madrigal et al. (2015), Habtoor et al. (2017) Serrasqueiro and Mineiro (2018), Neifar and Jarboui (2018), and Mbithi et al. (2022), who also proved the existence of a positive association between the size of the company and the level of disclosure presented. There are also several theories that try to explain this relationship, such as the legitimacy theory that states that larger companies are more exposed to society and, consequently, become “obliged” to comply with the disclosure requirements.

As previously mentioned, and based on the agency's theory, there is a positive relationship between indebtedness and the level of disclosure because the most indebted companies are under more pressure from creditors and, to be able to respond to them, they must disclose more information. This thesis also goes against

the theory of stakeholders and the theory of signaling that state that, to guarantee creditors and stakeholders and signal their ability to manage different risks, companies disclose more information. Thus, based on studies such as that by Deumes and Knechel (2008) and Höring and Gründl (2011) it was expected to find a positive relationship between indebtedness and the level of disclosure of risk information. Despite this, the results of this study point to a significant negative relationship between indebtedness and disclosure level. This result can be justified by the fact that entities with a lower level of risk may be more susceptible to disclosing information about risks, despite not being so pressured to do so.

Regarding the concentration of capital, several authors state that the greater the concentration of capital, the less likely the company is to disclose information. An entity whose capital structure is more concentrated and with shareholders with an active role in monitoring the company consequently makes the information also more concentrated in that restricted group of people, so there is not so much need to disclose it. Despite this, it was concluded that there is a positive relationship between the concentration of capital and the disclosure about risks. This result is in line with the results obtained by Abraham and Cox (2007) and Neifar and Jarboui (2018) and with the view of Jensen and Meckling (1976) who suggest that when the participation of the largest shareholder is quite high, and the other external investors realize that he behaves to maximize the company's value, conflicts of interest may occur between them. That said, external investors will impose less contractual restrictions on the company and, consequently, agency costs will reduce. With low agency costs, there will no longer be a need for the majority shareholder to retain information. Thus, there are incentives to keep disclosure levels consistent with maximizing the company's value (Jensen & Meckling, 1976; Oliveira et al., 2011).

5. Conclusion

The objectives of this study were to measure the level of disclosure about financial risks and to identify the determining factors of this level of disclosure in Portuguese non-financial companies. To this end, in a first stage, a content analysis was carried out on the management reports and accounts of the companies, through a disclosure index, created based on the disclosure requirements contained in the International Financial Reporting Standard No. 7 - Financial Instruments: Disclosures. In a second phase of the study, through a linear regression model, this disclosure index was related to a set of independent variables related to certain characteristics of the companies.

It was concluded that the disclosure index increases as the size of the company and the concentration of capital also increase and that indebtedness decreases. About indebtedness, a positive relationship was expected between this variable and the level of disclosure. Despite this, through this study it was concluded that indebtedness negatively influences the level of disclosure. That is, the lower the debt of a company, the greater the level of disclosure presented.

Regarding the other variables, they did not show any statistically significant association with the level of disclosure.

This study contributes to the identification of the determinants of risk disclosure in non-financial entities. Identifying the drivers of risk disclosure can help regulators to define risk disclosure requirements and improve accounting standards.

Although, this study has some limitations that must also be addressed. The first is related to the fact that the sample used is small, and the results obtained cannot be extrapolated to all non-financial companies in Portugal, since it is limited to a pre-defined list of listed companies. In addition, the analyzed period is limited to just one economic year, which makes it impossible to carry out a longitudinal analysis of the levels of disclosure presented over time by the companies under study.

Since the standards regarding the disclosure of risk information are constantly reviewed and evolving, it is suggested for future research, the analysis of disclosure and verification of the degree of compliance with future mandatory requirements, such as those provided for in IFRS 9, currently in force, and make a comparison of the results, to understand if the level of disclosure continues to evolve positively.

Considering the current context, it will also be interesting to see how companies have introduced information in their reports and accounts related to the risks associated with Covid 19 and its impacts.

Finally, it is also suggested to extend this study to unlisted companies, also covering small and medium-sized companies that are the most representative of the business fabric in Portugal.

Despite the limitations presented, this article contributes to the international literature in several ways. There is little evidence available regarding the risk reporting practices of Portuguese companies, so this study aimed to broaden the scope of current understanding of risk reporting practices and their determinants in this country. The results obtained can be extended to other countries and contribute to the perception of financial risk disclosure practices in non-financial entities and their determining factors, being especially useful for regulators and policy makers, in order to improve risk disclosure and improve transparency.

Acknowledgment

This work is financed by national funds through the FCT - Foundation for Science and Technology, I.P., under project UIDP/04043/2020.

References

- Abbas, D., Ismail, T., Taqi, M., & Yazid, H. (2021). Determinants of enterprise risk management disclosures: evidence from insurance industry. *Accounting*, 7, 1331-1338.
- Abdullah, M., Shukor, Z. A., & Rahmat, M. M. (2017). The influences of risk management committee and audit committee towards voluntary risk management disclosure. *Jurnal Pengurusan*, 50.
- Abraham, S., & Cox, P. (2007). Analysing the determinants of narrative risk information in UK FTSE 100 annual reports. *The British Accounting Review*, 39, 227-248.
- Adam-Muller, A., & Erkens, M. (2020). Risk disclosure noncompliance. *Journal of Accounting Public Policy*, 39, 106739.
- Al-Hadi, A., Hasan, M. M., & Habib, A. (2016). Risk committee, firm life cycle, and market risk disclosures. *Corporate Governance: An International Review*, 24(2), 145-170.
- Al-Hadi, A., Hasan, M., Taylor, G., Hossain, M., & Richardson, G. (2017). Market risk disclosures and investment efficiency: international evidence from the Gulf Cooperation Council financial firms. *Journal of International Financial Management & Accounting*, 28(3), 349-393.
- Allini, A., Ferri, L., Maffei, M., & Zampella, A. (2020). Determinants of financial instruments risk disclosure: an empirical analysis in the banking sector. *Corporate Ownership & Control*, 7(2), 20-31.
- Amran, A., Bin, A. M. R., & Hassan, B. C. H. M. (2009). Risk reporting: An exploratory study on risk management disclosure in Malaysian annual reports. *Managerial Auditing Journal*, 24(1), 39-57.
- Ashfaq, K., Zhang, R., Munaim, A., & Razzaq, N. (2016). An investigation into the determinants of risk disclosure in banks: evidence from financial sector of Pakistan. *International Journal of Economics and Financial Issues*, 6(3), 1049-1058.
- Azevedo, G., Oliveira, J. Sousa, L., & Borges, M. (2022). The determinants of risk reporting during the period of adoption of Bael II Accord: evidence from de Portuguese commercial banks. *Asian Review of Accounting*, 30(2), 177-206.
- Barako, D. G., Hancock, P., & Izan, H. Y. (2006). Corporate disclosure by kenyan companies. *Corporate Governance*, 14(2), 107-125.
- Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *The International Journal of Accounting*, 39, 265-288.
- Birt, J. L., Bilson, C. M., Smith, T., & Whaley, R. E. (2006). Ownership, competition and financial disclosure. *Australian Journal of Management*, 31(2), 235-263.
- Campbell, J. L., Chen, H., Lu, H., Dhaliwal, D. S., & Steele, L. B. (2014). The information content of mandatory risk factor disclosures in corporate filings. *Review of Accounting Studies*, 19(1), 396-455.
- Chalmers, K., & Godfrey, J. (2004). Reputation costs: the impetus for voluntary derivative financial instruments reporting. *Accounting, Organizations and Society*, 29, 95-125.
- Darus, F., & Taylor, D. (2009). Influences of proprietary and political costs on voluntary disclosure relating to financial instruments before and after mandatory requirements. *Corporate Ownership and Control*, 6(4), 391-406. <https://doi.org/10.22495/cocv6i4c3p5>
- Deumes, R., & Knechel, W. R. (2008). Economic incentives for voluntary reporting on internal risk management and control systems. *Auditing*, 27(1), 35-66.
- Dey, R., Hossain, S., & Rezae, Z. (2018). Financial risk disclosure and financial attributes among publicly traded manufacturing companies: evidence from Bangladesh. *Journal of Risk and Financial Management*, 11(50), 1-16.
- Doblar, M., Lajili, K., & Zéghal, D. (2011). Attributes of corporate risk disclosure: an international investigation in the manufacturing sector. *Journal of International Accounting Research*, 10(2), 1-22.
- Elshandidy, T., & Neri, L. (2015). Corporate governance, risk disclosure practices, and market liquidity: comparative evidence from the UK and Italy. *Corporate Governance: An International Review*, 23(4), 331-356.
- Elshandidy, Tamer, Fraser, I., & Hussainey, K. (2013). Aggregated, voluntary and mandatory risk disclosure incentives: Evidence from UK FTSE all share companies *. *International Review of Financial Analysis*, 30(January 2016), 320-333.
- Elzahar, H., & Hussainey, K. (2012). Determinants of narrative risk disclosures in UK interim reports. *Journal of Risk Finance*, 3(2), 133-147.
- Habtoor, O. S., Ahmad, N., Mohamad, N. R., & Haat, M. H. C. (2017). Linking corporate risk disclosure practices with firm-specific characteristics in Saudi Arabia. *Gadiah Mada International Journal of Business*, 19(3), 247-267.
- Hasan, A., Sufi. U., & Hussainey, K. (2023). Risk committee characteristics and risk disclosure in banks: evidence from an emerging economy. *Journal of Applied Accounting Research*, <https://doi.org/10.1108/JAAR-09-2022-0236>.

- Hassan, M. K. (2009). UAE corporations-specific characteristics and level of risk disclosure. *Managerial Auditing Journal*, 24(7), 668–687.
- Höring, D., & Gründl, H. (2011). Investigating risk disclosure practices in the european insurance industry. *The Geneva Papers*, 36(2002), 380–413.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Kongpraiya, C. (2010). The study of corporate risk disclosure in the case of Thai listed companies. *MA Risk Management* - University of Nottingham.
- Lemos, K. (2011). *Factores determinantes da divulgação de informação sobre instrumentos derivados. Evidência empírica em Portugal*. Universidad de Santiago de Compostela - Faculdade de Ciencias Económicas y Empresariales.
- Li, Y., He, J., & Xiao, M. (2019). Risk disclosure in annual reports and corporate investment efficiency. *International Review of Economics and Finance*, 63, 138-151.
- Linsley, P. M., & Shrives, P. J. (2006). Risk reporting: A study of risk disclosures in the annual reports of UK companies. *British Accounting Review*, 38(4), 387–404.
- Lopes, P. T., & Rodrigues, L. L. (2007). Accounting for financial instruments : An analysis of the determinants of disclosure in the Portuguese. *The International Journal of Accounting*, (July 2014), 25–56.
- Madrigal, M., Guzmán, B., & Guzmán, C. (2015). Determinants of corporate risk disclosure in large Spanish companies: a snapshot. *Contaduría y Administración*, 60, 757- 775.
- Malafronte, I., Porzio, C., & Starita, M. (2016). The nature and determinants of disclosure practices in the insurance industry: evidence from European insurers. *International Review of Financial Analysis*, 45, 367- 382.
- Mbithi, E., Moloi, T., & Wangombe, D. (2022). An empirical examination of board-related and firm-specific drivers on risk disclosure by listed firms in Kenya: a mixed-methods approach. *Corporate Governance*, 23(2), 298-322.
- Neifar, S., & Jarboui, A. (2018). Corporate governance and operational risk voluntary disclosure: evidence from Islamic banks. *Research in International Business and Finance*, 46, 43-54.
- Oliveira, J., Rodrigues, L. L., & Craig, R. (2011). Risk-related disclosures by non-finance companies: Portuguese practices and disclosure characteristics. *Managerial Auditing Journal*, 26(9), 817–839.
<https://doi.org/10.1108/02686901111171466>
- Salehi, M., Moradi, M., & Paiydarmanesh, N. (2017). The effect of corporate governance and audit quality on disclosure quality: evidence from Tehran stock exchange. *Periodica Polytechnica Social and Management Sciences*, 25, 32–48.
- Serrasqueiro, R., & Mineiro, T. (2018). Corporate risk reporting: analysis of risk disclosures in the interim reports of public Portuguese non-financial companies. *Contaduría y Administración*, 63(2), Especial, 1-23.
- Shivaani, M., & Agarwal, N. (2020). Does competitive position of a firm affect the quality of risk disclosure?. *Pacific-Basin Finance Journal*, 61, 101317.
- Zango, A., Kamardin, H., & Ishak, R. (2016). Audit quality, board gender and financial risk disclosure. *International Journal of Economics and Financial Issues*, 6(4), 55–61.

Leadership and Neurosciences: The Analysis of Emotional Arousal During Decision-Making Processes with Decision-Makers Exposed to Acute Stress

João Alexandre Lobo Marques¹, Filipa Magalhães de Moura e Mota Furtado¹, Pedro Crosara Motta², Bruno Silva² and Paulo Cortez²

¹Laboratory of Applied Neuroscience, University of Saint Joseph, Macao, China

²Departament of Teleinformatics Engineering, Universidade Federal do Ceará, Fortaleza, Brazil

alexandre.lobo@usj.edu.mo

filipa.furtado@usj.edu.mo

pedro.motta@lesc.ufc.br

bruno@lesc.ufc.br

cortez@lesc.ufc.br

Abstract: Corporate leaders are constantly dealing with stress in parallel with continuous decision-making processes. The impact of acute stress on decision-making activities is a relevant area of study to evaluate the impact of the decisions made, and create tools and mechanisms to cope with the inevitable exposure to stress and better manage its impact. The intersection of leadership and neurosciences techniques is called Neuroleadership. In this work, an experiment is proposed to detect and measure the emotional arousal of two groups of business professionals, divided into two groups. The first one is the intervention/stress group, n=30, exposed to stressful conditions, and the control group, n=14, not exposed to stress. The participants are submitted to a sequence of computerized stimuli, such as watching videos, answering survey questions, and making decisions in a realistic office environment. The Galvanic Skin Response (GSR) biosensor monitors emotional arousal in real-time. The experiment design implemented stressors such as visual effects, defacement, unfairness, and time-constraint for the intervention group, followed by decision-making tasks. The results indicate that emotional arousal was statistically significantly higher for the intervention/stress group, considering Shapiro and Mann-Whitney tests. The work indicates that GSR is a reliable stress detector and may be useful to predict negative impacts on executive professionals during decision-making activities.

Keywords: Decision making, Stress, Emotional arousal, Galvanic Skin Response, Neurosciences

1. Introduction

Emotional states, such as stress, play a significant part in decision-making processes. Although there is plenty of evidence that feelings influence decision-making, the extent of the impact is unclear. While there is evidence that emotions have a biasing impact, there is also evidence that we use emotional signals in quick, automated decision-making and that they have a tangible benefit in daily decision-making (Bechara et al., 1997). According to a study on financial decision-making under risk, low levels of emotional experience led to higher levels of performance through greater risk neutrality due to a steadier correlation between rational reward and subjective value (Schunk and Betsch, 2006).

There is a wealth of evidence that emotions can lead to decision-making biases. Information processing may be skewed by emotions. There is evidence, for example, that it is easiest to remember experiences that are close to one's emotional state (Fenton-O'Creevy et al., 2011). Emotions may also influence decision-making directly; for example, fear and anger have opposite (but significant) impacts on risk judgments (Lerner et al., 2004). Emotions also influence the emphasis placed on outcomes. For example, considering the negative long-term effects, strong negative emotions maximize the importance of short-term results (Fenton-O'Creevy et al., 2011). Generally speaking, there's a relationship between positive affect and optimistic decision-making, whereas negative affect is connected with pessimistic decisions (Wright & Bower, 1992).

Emotions play a part in risky decision-making as well. According to a study on financial decision-making under risk, low levels of emotional experience led to higher levels of performance through greater risk neutrality due to a steadier correlation between rational reward and subjective value (Schunk & Betsch, 2006).

Although there is plenty of evidence that feelings influence decision-making, the extent of the impact is unclear. While there is evidence that emotions have a biasing impact, there is also evidence that we use emotional signals in quick, automated decision-making and that they have a tangible benefit in daily decision-making (Bechara et al., 1997).

Decision heuristics research often lacks background and is heavily dependent on experimentation with participants that are unfamiliar with the activities being tested. The literature provides a strong focus on domain-specific knowledge and skills, on the development of complex cognitive schema that allows for quick associative pattern recognition, and the stimulation of large and complex behavioral repertoires (Fenton-O'Creevy et al., 2011).

Decision-making under stress research discloses that a great number of theories were obtained from four different theoretical models. They are known as the decision-making conflict theory model, threat-rigidity model, crisis model, and finally under time pressure decision-making model (Etzion, 1984).

The conflict theory model theorizes that the stress specifically associated with decision-making originates from a level of danger or threat perceived by the decision-maker to its well-being and from decision context. Here, the decision maker's self-reputation is at stake, being defined as a good or bad decision-maker based on the individual's alternate choice (Atsan, 2016).

The "Threat-Rigidity Effect" model proposed by Staw et al. (1981) illustrates that, in threatening situations, organizations, groups, and individuals may generally tend to behave rigidly (Staw et al., 1981). The two sorts of existing effects are information processing restriction and limitation in control.

In 1963, Hermann was one of the first individuals to utilize a theoretical approach for decision-making under a situational crisis (Hermann, 1963). This relevant initial outlook impacts the future developments in decision-making study under crisis (Billings et al., 1980). A crisis is described as a device of change, which may be linked with extreme behavior. It has been separated from other concepts such as tension, stress, anxiety, disaster, and panic, by the concept of stimulus and response. It's understood to be a stimulus that develops certain possible responses, such as panic or anxiety.

Finally, acute stress plays a fast and time-dependent role in decision-making (Pabst et al., 2013). Decisions often must be made by individuals, under strict deadlines. This may be an intimidating task that develops stress and cognitive tension. Bronner (1982) developed the "Theory of Decision-Making Under Time Pressure", becoming the principal theory of decision-making under stress. He defines three variables of time pressure: decision time, sensitivity, and problem intensity. Apart from these three variables, he mentions that time pressure limits the interaction and coordination among the decision-making units.

More recently, the use of biosensors during experiments for stress monitoring during decision-making activities has been adopted. Nevertheless, one key challenge is the physiological signal that should be monitored. The most suitable biosignals selection is essential for the experiment's success because of two main reasons: the degree of voluntary regulation over physiological parameters and the selectivity with the desired arousal is measured. As an example, the Galvanic Skin Response (GSR), also known as Electrodermal Activity (EDA), is suitable for detecting stress since the sweat glands are innervated by the sympathetic branch of the autonomic nervous system, being under low voluntary regulation (Poh et al., 2011). In contrast, heart rate variability (HRV) is also widely considered a valid stress monitoring tool since it is influenced by both sympathetic and parasympathetic autonomic branches, as well as being under partial voluntary regulation (through respiratory sinus arrhythmia) (Raaijmakers et al., 2013). HRV is the end product and can be used as a stress indicator, but it is less selective than GSR since it results from the constant interaction between branches. These two (2) physiological modalities can be evaluated noninvasively using commercial wearable sensors, allowing researchers to investigate the tradeoffs between selectivity and voluntary regulation.

The main objective of this work is to evaluate the results of an experiment monitoring the emotional arousal of executive professionals during decision-making processes to determine if groups submitted or not to stress can be classified based on GSR physiological monitoring.

Finally, to further develop the analysis, the following hypothesis is then stated:

H1: The stress group is indeed more stressed than the control group.

2. Literature Review

There are significant studies indicating that emotions may lead to decision-making biases and information-processing skewness. For example, research shows that it is easier to remember experiences that are close to one's emotional state (Bower, 1981) (Fenton-O'Creevy et al., 2011). Emotions may also influence decision-making directly; for example, fear and anger have opposite (but significant) impacts on risk judgments (Lerner and Keltner, 2001) (Lerner, Small and Loewenstein, 2004). Emotions also influence the emphasis placed on

outcomes. For example, considering the negative long-term effects, strong negative emotions maximize the importance of short-term results (Fenton-O'Creevy et al., 2011). Generally speaking, there's a relationship between positive affect and optimistic decision-making, whereas negative affect is connected with pessimistic decisions (Isen et al., 1978) (Kavanagh and Bower, 1985) (Schwarz and Clore, 2003) (Wright and Bower, 1992).

In research on the nature of expertise, intuition (an experientially dependent pattern recognition linked to the affectively cued) has been described as essential to expert performance. Dane and Pratt (2007) distinguish the decision heuristics literature, which largely promotes the opinion that intuitive decision-making is inferior to more rational ones, and expertise literature, which stresses the crucial role of intuition in expert performance. The distinct emphasis placed on the research process and context is a significant difference between these works of literature (Dane and Pratt, 2007). Decision heuristics research often lacks background and is heavily dependent on experimentation with participants that are unfamiliar with the activities being tested. There is also evidence that when decision-making is observed in the field or using methods that mimic real-life conditions, some of the primary cognitive biases known as maladaptive products of heuristic thinking in experimental environments either do not exist or contribute to better outcomes (Todd and Gigerenzer, 2007). In comparison, the expertise literature provides a strong focus on domain-specific knowledge and skills, on the development of complex cognitive schema that allows for quick associative pattern recognition, and the stimulation of large and complex behavioral repertoires (Fenton-O'Creevy et al., 2011). As a result, Dane and Pratt (2007) conclude that intuition would be more likely to be an efficient component of decision-making in performance domains requiring extensive expertise and complex domain-relevant schema.

In addition, the research on emotions supports the belief that emotions have many important influences on decision-making. Any of these may be classified as biased, with the ability to impair decision-making performance. Nevertheless, it is clear that there is a counter-argument: rather than feelings themselves being counterproductive to decision-making performance, expertise, and emotion regulation dictate whether emotions have a positive or negative effect on decision-making performance (Fenton-O'Creevy et al., 2011).

3. Research Methodology

This work aims to study the impact of acute stress on decision-making performance. For that, it is necessary to use an experimental model to accurately manipulate and measure the stress level in participants.

3.1 Sample and Experiment Modeling

The population comprises 44 healthy adults, split into a control group with 14 participants (32%) who were not submitted to stressors and a stress group with 30 participants (68%). From a demographics perspective, 64% were young adults ($n=28$), 36% were middle-aged adults ($n=16$), 59% were men ($n=26$), and 41% were women ($n=18$).

The proposed method considers the design elements and application specifics with a study to validate the proposed method's effectiveness in measuring arousal during the various stimuli and evaluating how it affects individual decision-making performance. Each participant follows the sequence of stimuli as the wearable biosensors collect their physiological data. These parameters are tracked and recorded in the iMotions software version 8.2 where participants' stress/ arousal level is computed. The system overview is illustrated in Figure 1.

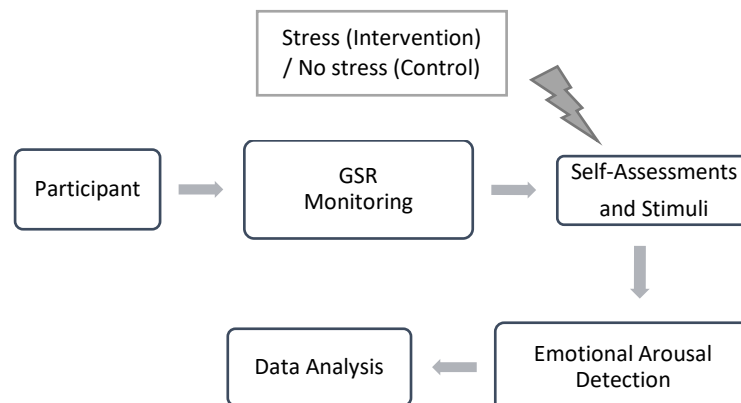


Figure 1: Overview of the study design

Several criteria were developed to determine the right decision-making activities. First and foremost, it was important to use reliable and valid decision-making activities. Choosing activities that could be done roughly in 20 minutes within which people are most overwhelmed was also critical. Finally, it was essential to use decision-making activities that could monitor naturalistic decision-making patterns, which could be repeated so that changes in preferences could be detected after stress induction. Within this research, to get to the simplest decision-making constructs, it was important to select activities that would allow the study of particular forms of decision-making, such as pure risk, pure uncertainty, or time constraint. Furthermore, since preferences for pre- and post-acute stress exposure had to be assessed, choosing tasks that could be conducted several times without experiencing practice consequences was critical.

The experiment was modeled with two (2) self-assessments, one in the beginning and the second after all the stimuli, and five (5) decision-making situations under a specific type of stressor. The model is presented as follows:

- Initial Self-Assessment
- Decision-Making (DM) under time pressure
- Decision-Making (DM) under misinformation
- Decision-Making (DM) under uncertainty
- Decision-Making (DM) under risk
- Framing of Outcomes Decision-Making (DM)
- Final Self-Assessment

3.2 Statistical Analysis

The current analysis will test normalization assumptions and nonparametric tests. Data normalization is estimated by the Shapiro-Wilk test. It examines how close the sample data is to a normal distribution. The null hypothesis is that the data are from a normal distribution, and the alternate hypothesis is that the data are not normally distributed (Ramachandran and Tsokos, 2021). Another test applied to the collected data is the Mann-Whitney. It is a nonparametric test equivalent to the t-Test for independent samples. Both tests are employed to determine if there are significant statistical differences between the two sample groups (MacFarland and Yates, 2016).

4. Results and Discussion

This section contains the findings collected during the stress exposition with the GSR monitoring.

4.1 Galvanic Skin Response (GSR) Monitoring Metrics

GSR originated from the sweat gland activation by the autonomic nervous system in the skin. The raw GSR data collection consists of two (2) characteristic components. The first component is known as peak detection, and it is measured in a binary code, (0) – if no peak is detected and (1) – if one or more peaks are detected. The second component refers to the peak count, which translates to the number of peaks present per stimuli for every participant. Both are relevant and presented as follows:

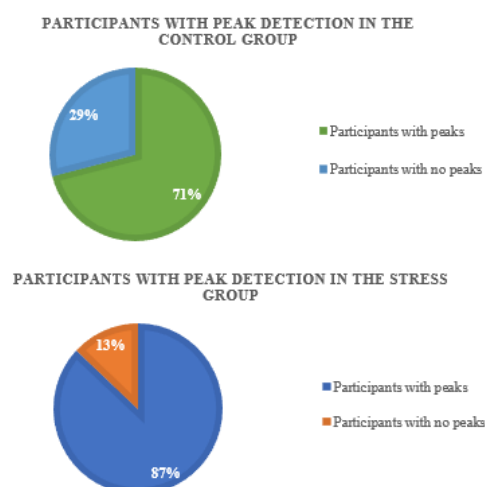


Figure 2: Percentage of participants with peak detection in the control and stress groups

4.1.1 Peak Detection

For peak detection, Figure 2 shows that in the control group, peaks were detected and counted in 71% of the participants ($n=10$), while there were no peaks detected in 29% ($n=4$) of the participants. For the stress group, peaks were detected and counted in 87% of the participants ($n=26$), while there were no peaks detected in 13% ($n=4$) of our participants. Hence there were many more participants with peaks detected and counted in the stress group than in the control group.

From Figure 3, it is possible to visualize the percentual comparison of peak detection per stimuli in both the control and stress groups. It is visually clear that the percentual number of peaks detected is higher for all the stimuli in the stressed group than in the controlled group. The percentual number of peaks detected varies more in both DM under misinformation and DM under risk, with a 34% difference between the two groups. For the three (3) stimuli, DM under time pressure, DM under uncertainty, and framing of outcomes DM, the variation is similar (around 30% difference) for both groups.

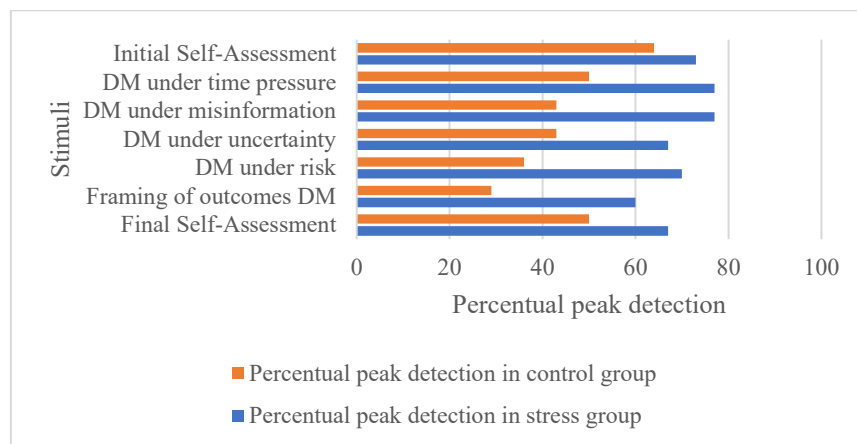


Figure 3: 1Percentual comparison of peak detection per stimuli in the control and stressed groups

The stimulus where the difference is less significant is the initial self-assessment, where the difference between the two (2) groups is only 9%. This lower difference may result from the natural stress created when a participant is submitted to self-perception questions [15], even for the control group, which was not exposed to stress information at the beginning of the experiment.

From Figure 3, it is also possible to infer that the stimuli that generated more peaks for the stress group were the stimulus where participants had to apply their DM skills under time pressure and after being misinformed about their task. For this stimulus, peaks were detected in twenty-three (23) out of thirty (30) participants (77%). The stimulus where fewer peaks were detected was for the framing of outcomes DM, with peaks detected for eighteen (18) out of thirty (30) participants (60%).

Regarding the control group, the stimulus that generated more peaks was the initial self-assessment, with peaks detected in nine (9) out of fourteen (14) participants (64%), followed by both the DM making under time pressure and the final self-assessment, with peaks detected in seven (7) out of fourteen (14) participants (50%) for both cases. The stimulus where fewer peaks were detected was also for the framing of outcomes DM, with peaks detected for four (4) out of fourteen (14) participants (29%).

It is important to highlight that the simple occurrence of GSR peaks is significantly relevant to the proposed research. Nevertheless, this parameter will denote emotional arousal and not necessarily a classification of stress. This means that excitement, joy, frustration, or other emotions may also generate these peaks. Because of that, the number of peaks detected during the whole experiment and each stimulus will provide a better comparison tool between the control and stress groups.

4.1.2 Peak count

Diving into the GSR's second metric, peak count, the results are presented as the number of peaks detected per participant in all seven stimuli. Figure 4 refers to the peak count per participant in the control group, and Figure 5 refers to the peak count per participant in the stress group.

From a general perspective, we can observe that the number of peak counts is much higher for the stress group than for the control group. The maximum peak count in the stress group is for Participant 43 (P43), with a sum

of one hundred and ninety-five (195) peaks during the whole experiment. In the control group, the maximum peak count is attributed to participant 10 (P10) with a sum of only seventy-nine (79) peaks during the whole experiment. Furthermore, in the stress group for participants 16, 22, 31, and 34 (P16, P22, P31, P34) no peaks were detected, and therefore the count is equal to zero (0). In the control group, the participants 3, 8, 12, and 13 (P3, P8, P12, P13) no peaks were detected, and therefore the count is equal to zero (0).

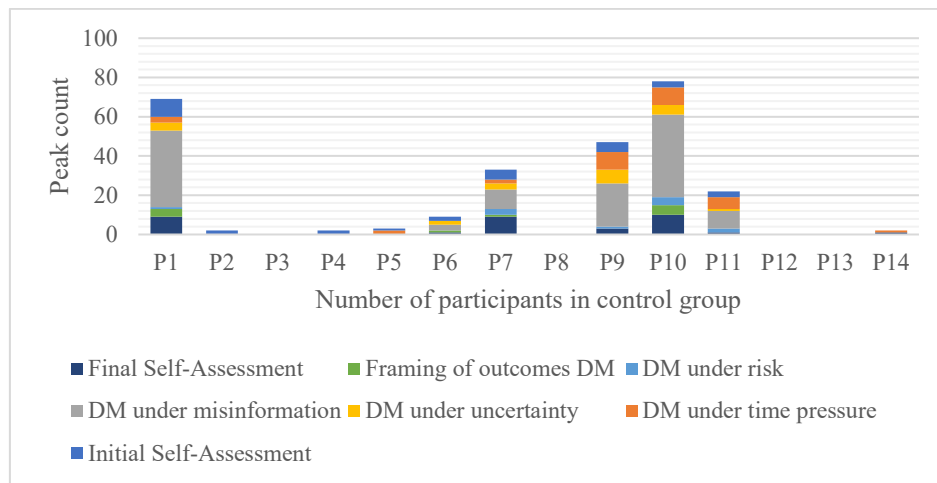


Figure 4: Peak count per participant in the control group for the whole experiment

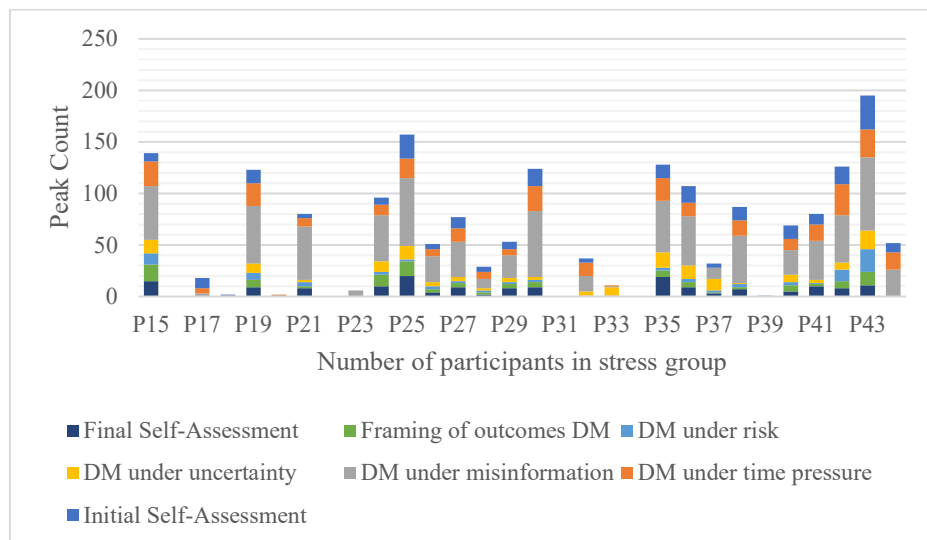


Figure 5: Peak count per participant in the stress group for the whole experiment

From Figure 4, we can also observe that even though, in the control group, the initial self-assessment was where peaks were detected for a higher number of participants (64%, n=8), the higher number of peaks is attributed to the DM under misinformation stimulus. For DM under misinformation, the average number of peak counts is nine (9) peaks, with a maximum peak count of forty-two (42) peaks (for P10) and zero (0) peaks in 57% (n=8) of control group participants. The lower number of peaks is attributed to DM under risk, where the average number of peaks is one (1), with a maximum peak count of four (4) peaks (P10) and zero (0) peaks counted for 64% (n=9) of control group participants (P2 until P6, P8, and P12 until P14).

From Figure 5, we can observe that even though, in the stress group, both DM under time pressure and DM under misinformation were the stimuli where peaks were detected for a higher number of participants (77%, n=23), the higher number of peaks is also singly attributed to the DM under misinformation. For DM under misinformation, the average number of peak counts is twenty-seven (27), with a maximum peak count of seventy-one (71) peaks (for P43) and zero (0) peaks in 23% (n=7) of stress group participants. The lower number of peaks is also attributed to the framing of outcomes DM, where the average number of peaks is four (4) peaks, with a maximum peak count of sixteen (16) peaks (for P15) and zero (0) peaks counted for 40% (n=12) of the control group participants.

4.2 Statistical Analysis

The first statistical test was Shapiro's to check whether each feature had a normal distribution, this being the null hypothesis. The features are Age, Gender, Peak Detection, and Peak Count. The results indicate that all features under analysis are nonparametric. With that, Hypothesis 1 can be tested.

H1 - Is the stress group indeed more stressed than the control group?

Testing this hypothesis is crucial to check if there is a difference between the groups. In other words, the control group presents different indicators to check if the stressors worked and if the stress group is indeed stressed. The features of Peak Detection and Peak Count are evaluated. In order to assess if features from the stress group have a different distribution from features from the control group, the Mann-Whitney test is used, with the null hypothesis being that features from both groups come from the same distribution.

The results show that the null hypothesis is rejected for the Peak Count feature, showing that the groups are statistically different, thus proving Hypothesis 1. It was expected that Gender and Age would have the same distribution, as there should not be an unbalance between groups.

5. Conclusion

The experiment conducted in this work indicates that the GSR, a real-time physiological monitoring tool, can be used to detect and quantify the presence of stress during decision-making activities. The conclusion is based on the exposure of experimental stimuli to two (2) groups of individuals (stress and control groups) and the corresponding recording of physiological reactions to understand stress's role in an individual's decision-making capacity.

The proposed experiment explores the possibility of acute stress affecting decision-making choices in healthy adults and to better understand the emotional expression of stress during the performance of decision-making tasks. We submitted adult participants to an acute laboratory stressor, followed by presenting them with five (5) tasks designed to assess different types of decision-making.

Future works might consider other biosensors, such as heart rate variability (HRV) and electroencephalograms (EEG), for recording brain activity. Furthermore, the conventional ways of studying human behavior have relied on a question-and-answer methodology (surveys and questionnaires) for a long time, which was used in this study to formulate the decision-making tasks. While this methodology can provide a lot of information, new approaches such as serious games and game biofeedback are being used to better evaluate the decision-making of individuals when submitted to single or multiple parameters that may originate from stress.

References

- Atsan, N. (2016). Decision-Making under Stress and Its Implications for Managerial Decision-Making: A Review of Literature. *International Journal of Business and Social Research*, 6(3), 38. <https://doi.org/10.18533/ijbsr.v6i3.936>
- Bechara, A., Damasio, H., Tranel, D., & Damasio, A. R. (1997). Deciding Advantageously Before Knowing the Advantageous Strategy. *Science*, 275(5304), 1293–1295.
- Billings, R. S., Milburn, T. W., & Schaalman, M. L. (1980). A Model of Crisis Perception: A Theoretical and Empirical Analysis. *Administrative Science Quarterly*, 25(2), 300. <https://doi.org/10.2307/2392456>
- Bower, G. H. (1981). Mood and Memory. *American Psychologist*, 36, 129–148.
- Bronner, R. (1982) *Decision Making Under Time Pressure: An Experimental Study of Stress Behavior in Business Management*. Lexington Books, 186 pp. ISBN: 9780669046960.
- Dane, E., & Pratt, M. G. (2007). Exploring Intuition and its Role in Managerial Decision Making. *The Academy of Management Review*, 32(1), 33–54. <https://doi.org/10.5465/amr.2007.23463682>
- Etzion, D. (1984). Moderating effect of social support on the stress–burnout relationship. *Journal of Applied Psychology*, 69(4), 615–622. <https://doi.org/10.1037/0021-9010.69.4.615>
- Fenton-O'Creevy, M., Soane, E., Nicholson, N., & Willman, P. (2011). Thinking, feeling and deciding: The influence of emotions on the decision making and performance of traders. *Journal of Organizational Behavior*, 32(8), 1044–1061. <https://doi.org/10.1002/job.720>
- Hermann, C. F. (1963). Some consequences of crisis which limit the viability of organizations. *Administrative Science Quarterly*, 61–82.
- Isen, A. M., Clark, M., Shalker, T. E., & Karp, L. (1978). Affect, Accessibility of Material in Memory, and Behavior: A Cognitive Loop? *Journal of Personality and Social Psychology*, 36(1), 12.
- Kavanagh, D. J., & Bower, G. H. (1985). Mood and self-efficacy: Impact of joy and sadness on perceived capabilities. *Cognitive Therapy and Research*, 9(5), 507–525. <https://doi.org/10.1007/BF01173005>
- Lerner, J. S., & Keltner, D. (2001). Fear, Anger, and Risk. *Journal of Personality and Social Psychology*, 81(1), 146–159.

- Lerner, J. S., Small, D. A., & Loewenstein, G. (2004). Heart Strings and Purse Strings. Carryover Effects of Emotions on Economic Decisions. *Psychological Science*, 15(5), 337–341. <https://doi.org/10.1111/j.0956-7976.2004.00679.x>
- MacFarland Thomas W., Yates Jan M. (2016) Mann–Whitney U Test:103–132. Cham: Springer International Publishing.
- Pabst, S., Brand, M., & Wolf, O. T. (2013). Stress and decision-making: A few minutes make all the difference. *Behavioural Brain Research*, 250, 39–45. <https://doi.org/10.1016/j.bbr.2013.04.046>
- Poh, M.-Z., McDuff, D. J., & Picard, R. W. (2011). Advancements in Noncontact, Multiparameter Physiological Measurements Using a Webcam. *IEEE Transactions on Biomedical Engineering*, 58(1), 7–11. <https://doi.org/10.1109/TBME.2010.208645>
- Pope, N. (2010). The impact of stress in self- and peer assessment. *Assessment and Evaluation in Higher Education*, 30, 51–63. <https://doi.org/10.1080/0260293042003243896>
- Raaijmakers, S. F., Steel, F. W., de Goede, M., van Wouwe, N. C., van Erp, J. B. F., & Brouwer, A.-M. (2013). Heart rate variability and skin conductance biofeedback: A triple-blind randomized controlled study. *Affective Computing and Intelligent Interaction*, Soesterberg, The Netherlands.
- Ramachandran Kandethody M., Tsokos Chris P. (2021). Chapter 11 - Categor- ical data analysis and goodness-of-fit tests and applications in Mathe- matical Statistics with Applications in R (Third Edition) (Ramachan- dran Kandethody M., Tsokos Chris P., eds.):461-490. Academic Press. 3 ed.
- Schunk, D., & Betsch, C. (2006). Explaining heterogeneity in utility functions by individual differences in decision modes. *Journal of Economic Psychology*, 27(3), 386–401. <https://doi.org/10.1016/j.joep.2005.08.003>
- Schwarz, N., & Clore, G. L. (2003). Mood as Information: 20 Years Later. *Psychological Inquiry*, 14(3/4), 296–303.
- Staw, B. M., Sandelands, L. E., & Dutton, J. E. (1981). Threat Rigidity Effects in Organizational Behavior: A Multilevel Analysis. *Administrative Science Quarterly*, 26(4), 501. <https://doi.org/10.2307/2392337>
- Todd, P. M., & Gigerenzer, G. (2007). Environments That Make Us Smart: Ecological Rationality. *Current Directions in Psychological Science*, 16(3), 167–171. <https://doi.org/10.1111/j.1467-8721.2007.00497.x>
- Wright, W. F., & Bower, G. H. (1992). Mood effects on Subjective Probability Assessment. *Organizational Behavior and Human Decision Processes*, 52, 276–291.

Organizational Behavior in Small and Medium Enterprises: A Systematic Review and Future Research Agenda

Shesira Belén Mamani-Ildefonso¹, Vanessa Noemi Quispe-Martinez¹, Franklin Cordova-Buiza^{2,3} and Gisela Analy Fernandez-Hurtado¹

¹Business Faculty, Universidad Privada del Norte, Lima, Peru

²Research, Innovation and Social Responsibility Department, Universidad Privada del Norte, Lima, Peru

³Faculty of Business Sciences, Universidad Continental, Huancayo, Peru

N00209747@upn.pe

N00171137@upn.pe

franklin.cordova@upn.edu.pe

gisela.fernandez@upn.edu.pe

Abstract: The main objective of the research is to determine the impact of organizational behavior among small and medium-sized companies in the scientific literature between 2012 and 2022. The Prisma 2020 methodology (Preferred Reporting Items for Systematic Reviews and Meta - Analyses) was used for the processing of data obtained in the collection of articles supported by databases such as: Redalyc, Scopus, Dialnet and Scielo from which a total of 18 articles related to the study variable were obtained, 90% of them coming from Latin America, occupying the first place Colombia followed by Ecuador, all in Spanish language; on the other hand, the sectors and items that were used for the studies were 30% private and industrial educational sector. For the analysis of relevant information and keywords on the variable, ATLAS ti.22 was used, which allows identifying the concepts and topics with greater mention and relevance, among them: the authors indicate that the study of organizational behavior allows predicting the behavior of people within companies; it also helps to find the best work structure, identifies people's skills and improves the flow of horizontal and vertical communication; at the same time, it is the most complex to develop because each person is considered a genuine and unique link, which have different criteria, thoughts and points of view. In conclusion, it is argued that in order to maintain a good working environment within the company where effective labor relations based on ethical and moral values are fostered or executed, the full understanding and management of behaviors and attitudes among the members of the organization must be prioritized; only in this way will there be a satisfactory impact on the performance of the collaborators. This research will allow future researchers to link organizational culture with the performance and loyalty of their collaborators, prioritizing policies and norms that sustain harmony and efficiency in a company.

Keywords: Organizational behavior, Work environment, Performance, MSMEs, Moral values

1. Introduction

In recent decades, both managers and administrators have sought to improve the behavior of their workers. The achievement of correct organizational behavior is the instrument par excellence to achieve higher levels of efficiency and effectiveness in organizations. It is increasingly essential to understand what influences the performance of people at work, which is why it should be seen as a process with a comprehensive approach that is oriented towards culture, climate, key processes and the composition of the organization, using a total view of the system (Jiménez et al., 2018). Likewise, it seeks to explain theoretical points of the motive and its interaction on the way in which people develop in a personal way and also in a group way in the companies towards the achievement of business goals, for which a convenient management of the organization is sought in functionality to the leadership style and the administration function for the organization, and that the administrators who develop in it are motivated and involved to be agents of change beyond the profile and demands in the job position (Salas and Murillo, 2017; Salazar-Rebaza et al., 2022).

This is why companies seek to achieve a high level of competitiveness so that all their processes and occupations become more and more positive. Employees are inspired by psychology, which is a field that deals with people's behavior, i.e., topics such as personality, reactions, perception, learning and motivation. Organizational behavior furthermore relates to set behavior; that is, it includes topics such as norms, functionalities, set formation and conflict performance (Manabi, 2020; Columba et al., 2016; Barro-Chale et al., 2022).

The study conducted by Lizandro et al. (2016), shows the influence of the organizational structure itself on the behavior of individuals. The relationship of the human factor with organizational results involves psychological and psychosocial processes that become difficult to quantify; therefore, a model is proposed in which the individual level, group level and organizational system level are analyzed, with which it is possible to characterize and describe different independent variables for each of the levels.

On the other hand, in relation to organizational behavior, the work environment is a primary indicator of company performance, conditioned by various causes: ergonomic aspects of the workplace, equipment, as well as internal standards, ergonomic conditions of the workplace, quality of leaders and managers, remuneration and satisfaction of each worker (Dávila, 2014; Molino et al., 2016; La Torre-Torres et al., 2022).

As last criterion the organizational behavior has its transcendence in that it is a process that is supported in the analysis of the subject as an essential part of a composition and that its behavioral state is going to transcend in the production of the organization ; therefore, knowing it by means of the organized procedures will be of effectiveness for the organization, as well as its ways in relation to know it by means of the organized procedures will be of effectiveness for the organization, as well as its ways with in relation to the quality of life in the work how the sets work, the common sense of the time the processes of planned change (Suárez et al., 2020; Cordova-Buiza et al., 2022; Cújar et al., 2013)

The objective of the research is to determine what is known about the impact of organizational behavior in medium and small companies according to sources of scientific literature between 2012 and 2022; also, the approach of specific objectives that are broken down into what is known about organizational climate, perception of employees on organizational culture, and internal administrative structural management; aspects that encompass the impact of the topic of interest and that incite improvements in the organization.

2. Methodology

The present research employs a method of information gathering known as empirical literature search, which consists of the search, collection and analysis of scientific articles in recognized databases according to the variable of study, in this case organizational behavior. To reaffirm the above-mentioned, according to Morgan (2019), research is a process that seeks to obtain reliable information to understand, verify, correct or apply the knowledge obtained from the studied object.

Likewise, the search of the materials found in the databases was carried out methodically and with precision, since in this way accurate and adequate information will be found. There is a diverse amount of databases to search and collect research articles, the most used in the development of this work was the Dialnet database, which from the beginning reflected the authors of this research to be very orderly, didactic and specific for the search of data, since the search was carried out in a methodical and precise way, The most used in the development of this work was the Dialnet database, which from the beginning reflected to the authors of this research to be very orderly, didactic and specific for the search of data since it has a great precision of search filters such as years, countries, languages and categories, likewise, to have more access to information, the search of sources in databases such as Redalyc, Scopus, Dialnet and Scielo was performed, obtaining a total amount of 18 articles.

Then, the keyword method was applied, and it was done by searching for synonyms of the main variable, these words were "work environment", "performance" and "company". Similarly, filters were applied for the inclusion or exclusion of information. With respect to the latter, although articles were obtained in the databases, some of these did not comply with the IMRD structure (Introduction, Methodology, Results, Discussion or Conclusion), so they were not related to the study variable "organizational behavior" or were outside the established years and geographic location, so they had to be discarded. The following Boolean operators were also used: ["organizational behavior" AND ("medium and small enterprises")]. Redalyc ("organizational behavior") AND ("small and medium-sized enterprises") Dialnet ("organizational behavior") AND ("small and medium-sized enterprises") Scielo ("organizational behavior") Scopus ("organizational behavior").

On the other hand, the 18 articles that did comply with the aforementioned data were retained since they contained the date established within the desired years and the heading of received and accepted, in addition to providing the research with accurate information related to the variable of organizational behavior.

It is worth highlighting that a systematic literature review is of great relevance to the exploration of the different peer-reviewed articles. Likewise, Scopus, Scielo, Dialnet and Redalyc were selected as search databases, since they provide a wide coverage of journal articles.

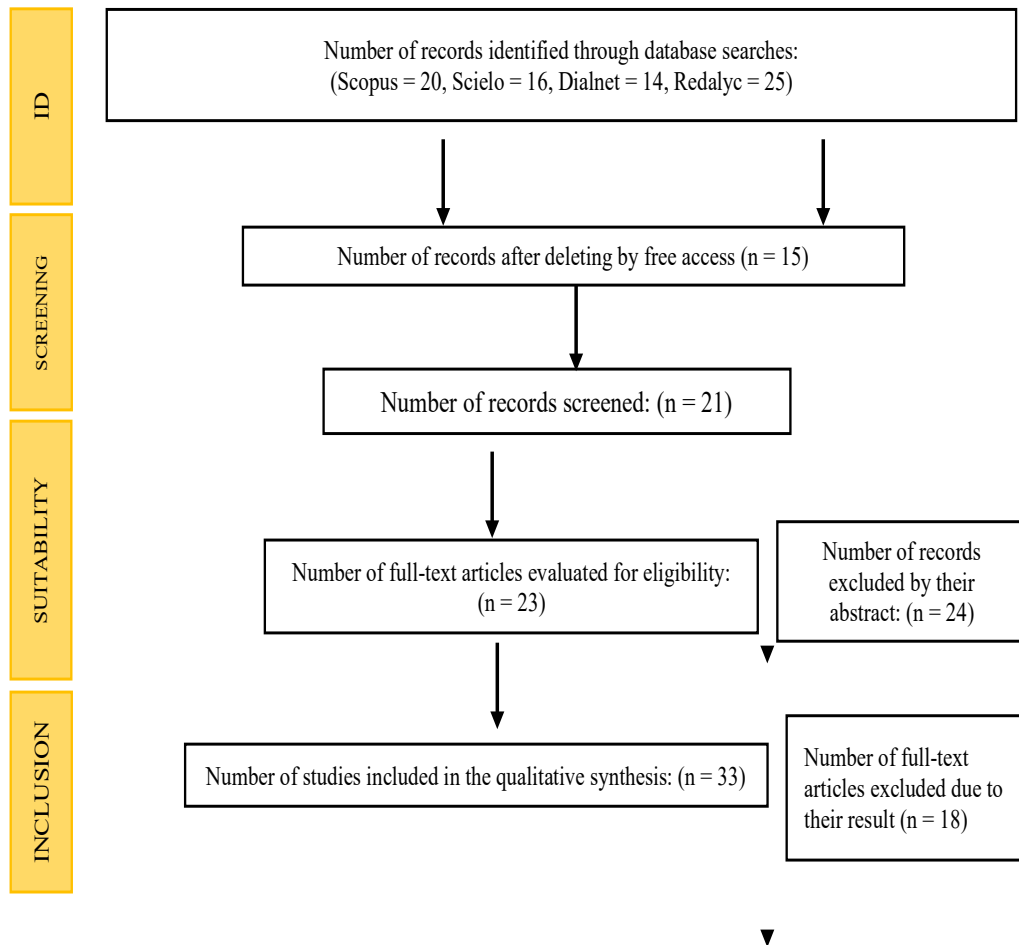


Figure 1: PRISMA 2020 – Flow Diagram

In the process of researching the scientific literature, the search was organized through the PRISMA model, which allows showing the step-by-step of the findings in addition to the process of filtering and eliminating articles that are not related to the study of the present review; in this way, it is expected to maintain the standards of coherence in the content.

3. Results and Discussion

The results of the systematic review are presented in relation to databases, years of publication, scientific journals, methodological approaches, and types of studies.

3.1 Key Issues Identified in Articles Using ATLAS ti

The following diagram shows the grouping of key words found in the selected articles. For this procedure, the qualitative analysis tool ATLAS.TI was used, which allows underlining the ideas and contents of the authors in each selected article and then automatically importing a network diagram.

Figure 2 shows that the words that were most effective in the database searches were: organizational behavior, repeated 11 articles, followed by behavioral effectiveness, organizational psychology, and people management with 2 articles respectively; and finally organizational diagnosis with two articles, making 18 articles selected and filtered.

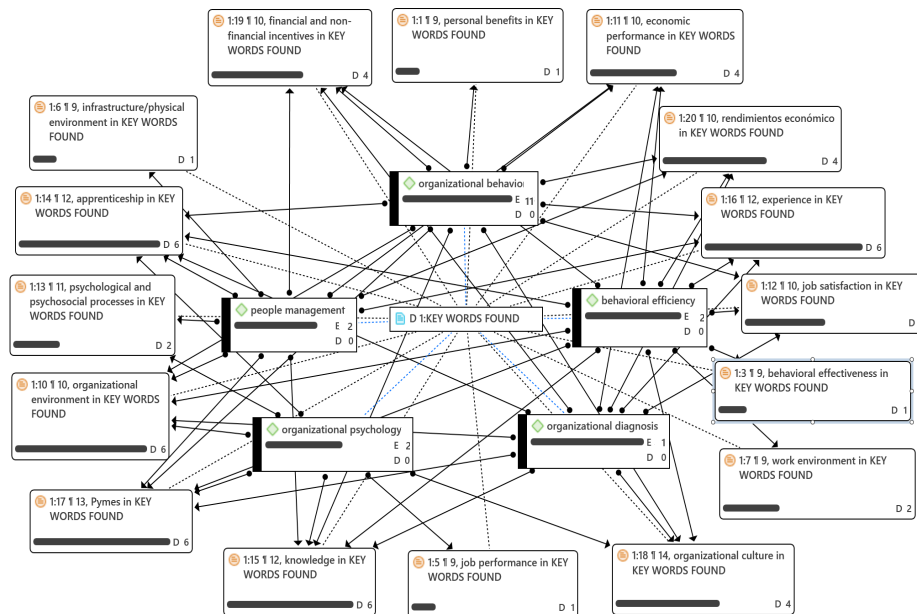


Figure 1: Flow chart of key topics – Atlas ti.

3.2 Descriptive Analysis of Articles

According to figure 3, the largest number of articles found have as country-of-origin Colombia from the years 2013, 2014, 2019 and 2021, which is very relevant since it is within the geographical area of the present research. On the other hand, the articles found come from countries such as Mexico, Cuba, and Ecuador, considering that the year of the systematic review is very scarce.

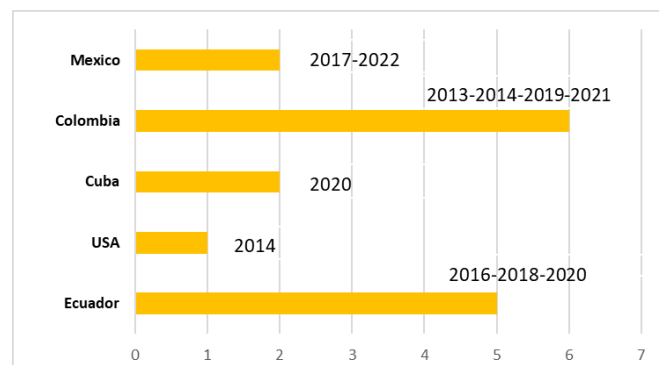


Figure 3: Country and Year of Origin of the Articles

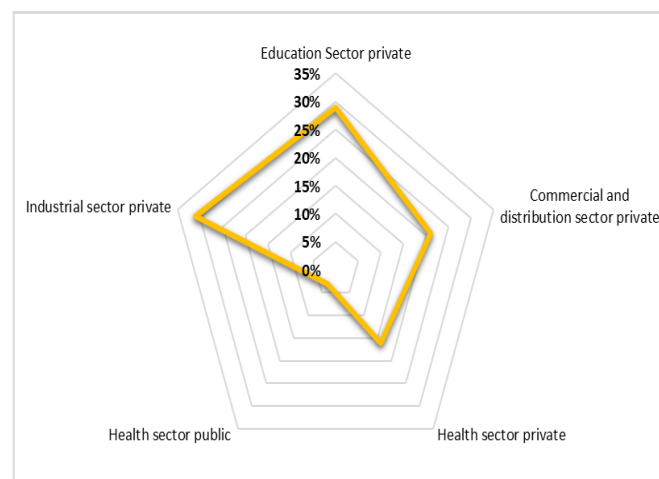


Figure 4: Business sectors Research

The analysis shows a significant participation of various business sectors, the main one being the industrial sector (31%), where private companies are involved. The education sector is in second place with 25% participation, followed by the commercial and distribution sector with 21%. It is worth mentioning that a subdivision of types of companies has been made where most belong to the private sector, except for one company in the health sector, which is public and represents 3% of participation in the total number of items investigated.

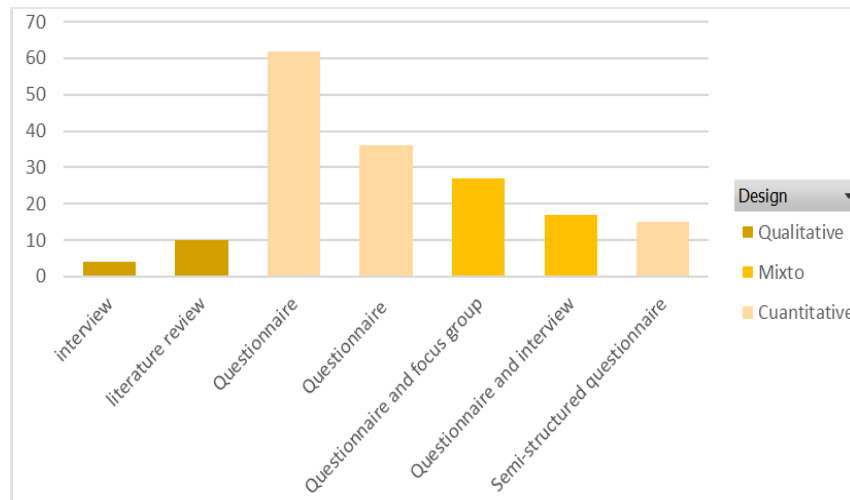


Figure 5: Research designs and applied tools

As shown in Figure 5, an analysis of the design and tools used in the selected articles was carried out. As a main filter, we found the subdivision of 3 types of designs, which are quantitative with 72%, followed by mixed with 17%, and finally a qualitative analysis of 11%. For each design, various tools have been found using as main methodological technique the survey, applying tools such as the questionnaire in 67%, followed by mixed tools where questionnaires and focus groups participate in 11%; however, there is also the presence of interviews and literature reviews as qualitative study tools in 6%.

Effects of organizational behavior in a company

Organizational behavior seeks to understand how individuals behave in an organization, why they work the way they do, and the effect of their behavior on the company. In the same way, the authors of different studies agree that the impact that organizational behavior has on a company is essential so that it can use such understanding as a fundamental tool to improve the effectiveness of organizations (Morgan, 2019; Morales et al., 2021). On the other hand, the organizational climate at present has acquired fundamental importance and is considered a fundamental part of organization's tactics. In the case of the research of García (2014), both were based on what induces certain behaviors in people; in this way, the organizational climate and the quality of the environment become an important element. Since, in functionality of the same an employee can develop his work with high or low performance standards.

On the other hand, there is performance in the work environment where the work is carried out by the company's personnel, where the quality of said environment is of the utmost importance since it can be almost good, where it has a monumental impact on the company as well as employees. Well, depending on the functionality of this and the means it gives, an employee will be able to develop their work to a greater or lesser performance Arrondo (2013), since when people enter an organization, they already have individual characteristics that will influence ostensibly in Organizational Behavior (OC), and this will influence them.

Second, organizational culture and performance have been studied in different environments. However, the models used in all changing are different, so it is inescapable to recognize that organizational culture has a determining role in the effectiveness of companies (Morales et al., 2021; Molino et al., 2016). In addition, their analysis found no positive interaction between culture and organizational performance. This is supported by Molino et al. (2016), who present in their analysis that none of the types of organizational culture such as clan dasocratic, market, and hierarchy remain involved in financial performance, focusing on an increase in sales and return on assets (ROA).

The clan culture is characterized by enormous cohesion among its members, collaboration, described as "an extended family" so much so that they do not look like economic entities. In this type of culture, instead of

norms such as hierarchy and competition, values such as group work prevail, and programs that activate collaboration among employees and the commitment of company members. The dasocratic culture has as its main characteristic and assumption that innovation and pioneering initiatives lead companies to triumph; its main objective is to develop new products and services and be prepared for what is to come, therefore, top management focuses on creating entrepreneurship and creativity (Dávila and Jiménez, 2013; Nava, 2022; López, 2020).

Third, we have the performance within the organizations that was considered an important issue at the end of the years. Organizational performance indicates the degree to which specific goals are achieved, which generally have within them a sequence of indicators to measure the efficiency and effectiveness of the organization (Salas and Murillo, 2017). The authors Muñoz et al. (2013) determined four models: the open system model, focused on flexibility, resource purchase, increase, and external help of the organization; the internal process model, which prioritizes equality, communication, and internal control of the organization; the rational model, which meets the criteria of efficiency and productivity externally to the company; and the model of human interrelationships, focused on flexibility and development of human resources to a degree internal to the organization.

Finally, the analysis of organizational behavior as a dynamic axis of efficiency and effectiveness in organizations, is currently a crucial meditation. The key to a successful administration for the development of an organization is in the reaction of the individuals who participate in it; hence, organizational behavior is an essential instrument for the benefit of all types of companies, such as organizations, government agencies, schools, and service companies. Wherever there are companies, there is a need to explain, understand, prophesy, and improve the management of human behavior (Columba et al., 2016; Morales et al., 2021). Organizational composition is important in each organization; it defines many properties of how it will be ordered and has the primary functionality of implanting authority, hierarchy, chain of command, organizational charts, and departmentalizations, among others (Nava, 2022). Likewise, companies must have an organizational composition according to each of the occupations or tasks they intend to do, with a suitable composition that enables them to implement their functionalities, and apartments in order to create their services or products, through an order and a convenient control to achieve their goals and purposes. In addition, organizational composition in the organization should start from the clarity of its operational purposes and be a facilitator that enables the achievement of these objectives through the proper coordination of human, financial, and material resources.

He further defines it as the group of functionalities and interactions that formally determine the functionalities that each unit should perform and the mode of communication. In this way, within the analysis of organizational behavior, we consider dependent and independent changers (Cújar et al., 2013; Suárez et al., 2020; Dávila, 2014)

The dependent variables that certain authors believe or that stand out the most are absenteeism, productivity, and job satisfaction; these variables interact with agents of the environment that represent both the individual and the organizational system; however, each agent, according to its characteristics and priorities, gives it the corresponding level of consideration (Arrendondo et al., 2012; López, 2020).

Different authors agree that it is important, because their contributions become a great way to promote the economic and social development of an area, contributing to a better distribution of resources and wealth; in addition, they are the largest generators of jobs (above the huge corporations) contributing some security to the labor market (Molino et al., 2016; Dávila and Jiménez, 2013).

Nowadays, companies group a sequence of primordial properties to be able to optimize their occupations; the environment where all workers work is indispensable to be able to make a better organizational behavior, it also influences the beneficial process, since through the adequate application and evaluation of both cases presented, a better productivity and competitiveness can be achieved under a quality scheme. Because of what has been observed, it is fundamental for managers to understand organizational behavior as it is today (Morales et al., 2021).

A snapshot of the few profound changes that are now occurring in companies supports this confirmation.

A common employee is getting older; more and more women are joining the workforce; cutbacks and the exhaustive use of temporary workers continue to deplete the loyalty bonuses that historically kept several employees with their employers; and universal competition calls for workers to be more flexible and learn to assimilate rapid change.

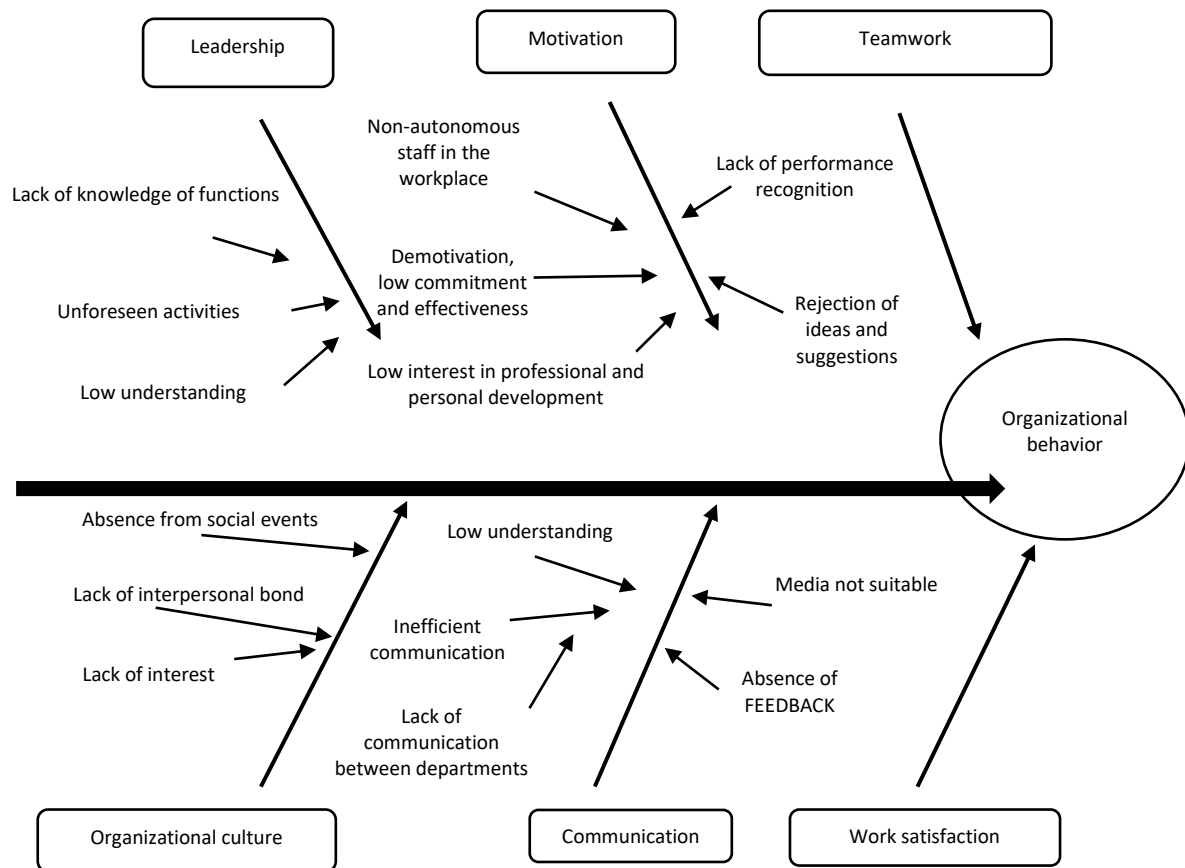


Figure 6: Ishikawa diagram

The importance of creating and developing MYPES with good organizational behavior

The war on terrorism has brought to the table the challenges of working through, and governing individuals through, times of uncertainty. In short, there are currently several challenges and opportunities for managers to use the concepts of organizational behavior.

In this section, we review some of the most critical issues facing managers and reflections on organizational behavior from the perspective of business administration (Lizandro et al., 2016; Suárez et al., 2020; Jiménez and Silva, 2018).

4. Conclusions

The present investigation applies a method of information gathering known as empirical literature search, which is quite fundamental for the collection and study of selected scientific articles for the development of the investigation, providing truthful and specific information. This instrument of investigation is made with the inquiry of articles in the databases having as variable of inquiry "organizational behavior".

In relation to the methodologies applied in the articles reviewed, the most used research design has been the quantitative type, using forms and surveys as primary tools. By performing this type of methodology, more concrete, precise, and accurate results are obtained with respect to the variable under study. Likewise, the numerical and statistical verification of the data established in these tools is done using the Cronbach's alpha study model and tests (t Student, Pearson's correlation and regression study).

Motivation is the basic foundation of personal, professional, and union leadership because it enables individuals to perform activities, achieve goals, fulfill dreams, and achieve social and family self-fulfillment. Therefore, leaders must be people capable of positively influencing the behavior of work groups, transmitting and receiving directives in a suitable way, reflecting loyalty, honesty, sense of belonging, and ability to respond to the positive and negative things that manage to reach their history.

Therefore, it is necessary that as well as the directors or heads of administrative departments produce attention calls, memos, etc., they can also detect the cost of each activity and the effort and commitment needed from the employees to satisfy the company's requests. In addition, they should be able to detect the cost of each activity, the effort, and the commitment needed from the employees to satisfy the company's requests, which would motivate the work groups and give them new responsibilities that guarantee their growth within the organization. Therefore, shared responsibilities must be aimed at designing strategic activities that encourage, enhance, and implement creativity on the part of managers, administrators, leaders, and employees within the company. Since, once an employee feels conditioned to a way of working, he/she is refused the possibility of giving resolutions to the problems that may be exposed in the exercise of his/her functions, he/she will end up longing for another place of work. Therefore, one of the ways to motivate employees' creativity is through shared responsibilities, i.e., making them aware that their failures will have repercussions on the tasks of their co-workers.

Finally, when knowing what organizational behavior is and its importance in the application within the companies, it is mentioned that if this variable is not applied correctly, it would have an impact on the perception that the worker has in relation to his/her daily work area. One of the monumental challenges faced by managers and directors of companies of all types and sizes is achieving optimal and balanced organizational behavior. Once a suitable organizational behavior is achieved, considering all the components involved in it, the companies have the possibility of achieving relevant results such as the growth of competitiveness and work in a balanced climate and in harmony with all the assistants. They will be willing to provide growth in productivity and, therefore, achieve optimization in the quality of products and services offered by the organization. The leaders of the companies are the ones called to take this responsibility and to be able to improve organizational behavior and propitiate an adequate environment for the development of learning, creativity, and novelty in the company.

References

- Arredondo, F., Ferrer, J. and Castaño, L. (2013) "Organizational citizen behavior and csr", *Administration Notebooks*, Vol 24, No 4, pp. 221-239.
- Barro-Chale, A., Rivera-Castañeda, P., Ramos-Cavero, M. J. and Cordova-Buiza, F. (2023) "Agricultural associations and fair trade in the peruvian rainforest: A socioeconomic and ecological analysis", *Environmental Economics*, Vol 14, No 1, pp 24-35.
- Columba, C., Bravo, J., Márquez V. (2016) "Organizational behavior and production processes in Mipymes", *Scientific Journal*, Vol 2, No. 4, pp. 408-420.
- Cordova-Buiza, F., Aguirre-Parra, P., Garcia-Jimenez, M. G. and Martinez-Torres, D. C. (2022) "Virtual leadership as a development opportunity in business context", *Problems and Perspectives in Management*, Vol 20, No 2, pp 248-259.
- Cújar, A., Ramos, C., Hernández H. and López, J. (2013) "Organizational Culture, evolution in measurement", *Management Studies*, Vol 29, No. 128, pp. 350-355.
- Dávila, C. (2014) "The role of values in the prediction of organizational commitment and organizational citizenship behavior", *Anuario de Psicología*, Vol 42, No 1, pp. 51-64.
- Dávila, M. and Jiménez, G. (2013) "The role of values in the prediction of organizational commitment and organizational citizenship behavior", *Yearbook of Psychology*, Vol 42, No 1, pp. 51-64.
- García, R. (2014) "Organizational Behavior an Integral Conceptualization", *Information Institute*, *Faculty of Information and Communication*, Vol 1, No. 19, pp. 59-75.
- Lizandro, A., Molina, S., Ítalo, B. and Véliz, S. (2016) "Organizational behavior and its importance for business administration", *Scientific Journal*, Vol 2, No. 4, pp. 498-510.
- Jiménez, W., Silva, I. and Gallardo, W. (2018) "Influence of organizational behavior as a necessary practice for the administration of Small and Medium Enterprises", *Publishing Journal*, Vol 5, No. 14, pp. 192-201.
- La Torre-Torres, M. T., Pando-Medina, Z. M., Aragon-Ortega, P. M. and Cordova-Buiza, F. (2022) "Administrative management and work performance in hardware and construction SMEs: The case of Justiniano Soto Villanueva S.R.L., Peru", *IBIMA Business Review*, 2022.
- López, M. (2020) "Improving the performance of trading companies based on Organizational Behavior", *Faculty of Industrial Engineering*, Vol 41, No. 2, pp. 1815-5936.
- Manabí, F. (2020) "Improving the performance of trading companies based on Organizational Behavior", *Faculty of Industrial Engineering*, Vol 41, No. 2, pp. 1-8.
- Molino, A., Briones, I. and Arteaga H. (2016) "Organizational behavior and its importance for business administration", *Scientific Journal*, Vol 2, No. 4, pp. 498-510.
- Morgan D. Basic and advanced focus groups, SAGE Publications.
- Morales, S., Michaga, F. and Tapia, E. (2021) "Reflections on organizational behavior from business management", *Research, Investigation and development*, Vol 4, No 6, pp. 35-42.
- Muñoz, O., and Monroy, R. (2013) "Organizational culture in a company owned by its workers", *Administration Notebooks*, Vol 26, No. 47, pp. 259-283.

- Nava, M. (2022) "Predictive Model of Organizational Willingness and Commitment", *Administrative Research*, Vol 51, No. 130, pp.1-18.
- Salas, L. and Murillo, G. (2017) "Effect of organizational culture on the performance of SMEs in Cali", *Suma de Negocios*, Vol 8, No. 18, pp. 88-95.
- Salazar-Rebaza, C., Zegarra-Alva, M. and Cordova-Buiza, F. (2022) "Management and leadership in university education: Approaches and perspectives", *Problems and Perspectives in Management*, Vol 20, No.3, pp 130-141.
- Suárez, I., Tinajero, R. and Jácome, I. (2020) "Organizational behavior and its role in business management", *Publishing Journal*, Vol 7, No. 24, pp. 1-8.

Network Governance in Healthcare: A Systematic Literature Review

Arjen Maris¹, Stijn Hoppenbrouwers², Pascal Ravesteijn³ and Jos van Hillegersberg¹

¹University of Twente, Enschede, The Netherlands

²HAN University of applied sciences, Nijmegen, The Netherlands

³HU University of applied sciences, Utrecht, The Netherlands

a.maris@utwente.nl

Abstract: The typical structure of the healthcare sector involves (specialist) intertwined practices co-occurring in formal or informal networks. These practices must answer to the concerns and needs of all related stakeholders. Multimorbidity and the need to share knowledge for scientific development are among the driving factors for collaboration in healthcare. To establish and keep up a permanent collaborative link, it takes effort and understanding of the network characteristics that must be governed. It is not hard to find practices of Network Governance (NG) in a variety of industries. Still, there is a lack of insight in this subject, including knowledge on how to establish and maintain an effective healthcare network. Consequently, this study's research question is: How is network governance organized in the healthcare sector? A systematic literature study was performed to select 80 NG articles. Based on these publications the characteristics of NG are made explicit. The findings demonstrate that combinations of governance style (relational versus contractual governance) and governance structure (lead versus shared governance) lead to different network dynamics. Furthermore, the results show that in order to comprehend how networks in the healthcare sector emerge and can be regulated, it is vital to understand the current network type. Additionally, it informs us of the governing factors.

Keywords: Network governance, Healthcare, Systematic literature review, Network characteristics

1. Introduction

Healthcare is organized as a dynamic network of multiple specialists that work together to provide the best care (Grit and Dolfsma, 2002; Cebul *et al.*, 2008). The best healthcare is considered accessible, affordable and of high quality for everyone (OECD, 2019). Providing the best possible care is a complex task that can only be accomplished by working together (Glimmerveen *et al.*, 2020). To provide the best healthcare and achieve a more uniform approach across the sector, there is a growing desire for more integrated healthcare (Minkman, 2017).

As a result, government is proposing several policy changes in Dutch long-term healthcare, with the goal of more actively governing the healthcare networks in terms of regulating competition and cooperation amongst healthcare stakeholders (Ministry of Finance, 2020). This is important because the Dutch population is aging and as a result, the demand for healthcare and the shortage of personnel in the care sector are both increasing (CPB, 2019, 2020, 2021). In addition, healthcare costs are increasing rapidly across OECD countries and is expected to grow more than the economy, increasing the pressure on the healthcare system (Rouzet *et al.*, 2019). This highlights the need for more control over the healthcare network, also known as Network Governance (NG).

A network is a consortium made out of three or more legally autonomous organizations that interact to accomplish individual as well as collective objectives (Provan and Kenis, 2008). According to Agranoff and McGuire (2001), a network is a multiorganizational arrangement used to solve problems that cannot be solved by one organization. A long-term partnership between intersectoral, governmental, and non-profit organizations makes up a network (McGuire and Agranoff, 2011). NG is defined by Jones *et al.* (1997) as '*a select, persistent, and structured set of autonomous firms (as well as nonprofit agencies) engaged in creating products or services based on implicit and open-ended contracts to adapt to environmental contingencies and to coordinate and safeguard exchanges. These contracts are socially rather than legally enforceable.*' Isett *et al.* (2011, p. i158) simplify NG as '*entities that fuse collaborative public goods and service provision with collective policymaking*'. Provan and Kenis (2008) state that the collective policymaking is based on the principles of trust, reciprocity, negotiation, and mutual interdependence among actors.

Network Governance is used in a variety of industries, including fashion, finance, and healthcare (Jones, Hesterly and Borgatti, 1997) and the concept of NG shares similarities to other governance concepts such as collaborative governance (Wang & Ran, 2021). Although NG has been used in the field of healthcare for some time, there is still a lack of knowledge on the subject. More research is required, in particular on the essential characteristics that define the most effective form of governance, as well as on the precise methodology used to operationalize each mode of governance (Wegner, Teixeira and Verschoore, 2019). That is why we conducted a systematic literature review on NG in healthcare with the following research question in mind: How is network governance organized in the healthcare sector?

In the remainder of this paper, the research method used is discussed, followed by the results of our study. After the results, the findings are examined in more depth, and limitations are described. The final section presents the conclusions and the research agenda that was drawn up.

2. Method

We conducted a systematic literature review (SLR) to find out how NG is evolving in the healthcare sector. A SLR helps to locate the available (international) evidence, confirms current practices, tackles variations, and identifies a potential research agenda (Munn *et al.*, 2018). The time frame of our literature review spanned June 2021 to February 2023. The research process (figure 1), inclusion and exclusion criteria, and how various results are combined into a single story are discussed below in accordance with the PRISMA statement (Liberati *et al.*, 2009) and the guidelines for SLRs in management and organizational studies (Denyer and Tranfield, 2009).

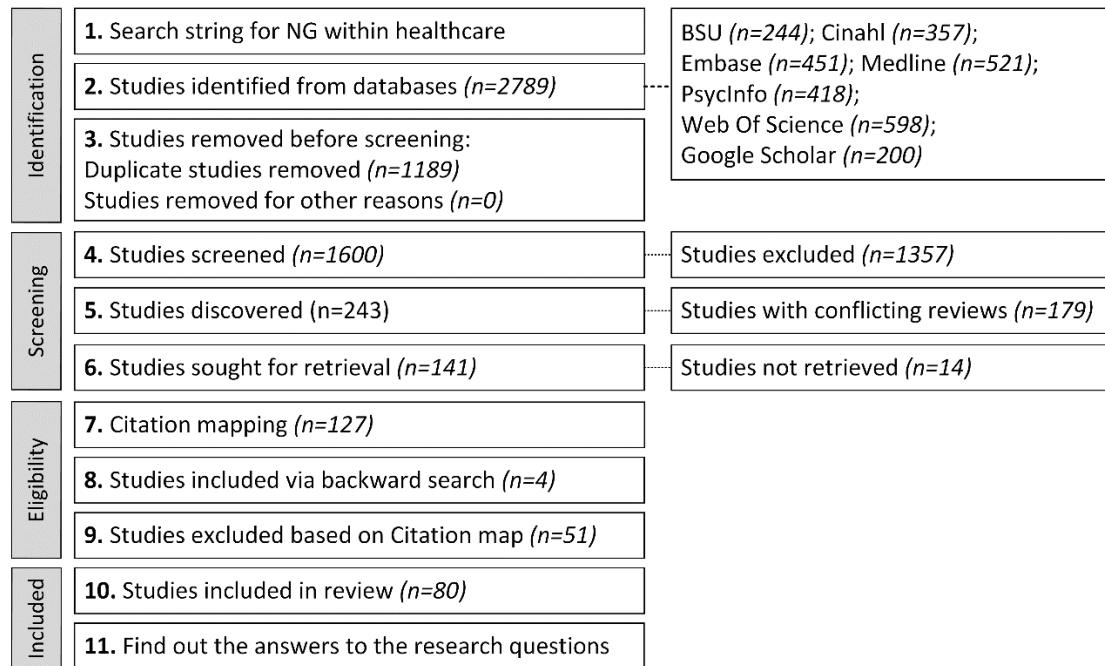


Figure 1: Research process

2.1 Identification

During the identification phase we worked together with an expert in SLRs. In this phase, potential keywords and meta phrases were derived from and evaluated against pertinent research papers. This exploratory study led to the creation of the following NG search string:

- S1 *TI ((network* OR collaborat* OR cooperat* OR multisector* OR intersector* OR partnership* OR (multi N1 stakeholder*))) N1 (governance* OR governing)) OR AB ((network* OR collaborat* OR cooperat* OR multisector* OR intersector* OR partnership* OR (multi N1 stakeholder*))) N1 (governance* OR governing)) OR SU ((network* OR collaborat* OR cooperat* OR multisector* OR intersector* OR partnership* OR (multi N1 stakeholder*))) N1 (governance* OR governing)) OR KW ((network* OR collaborat* OR cooperat* OR multisector* OR intersector* OR partnership* OR (multi N1 stakeholder*))) N1 (governance* OR governing))*
- S2 *TX "lead organization-governed"*
- S3 *TX "participant-governed"*
- S4 *TX "network administrative organization"*
- S5 *TI (health N1 (system OR sector) N1 governance) OR AB (health N1 (system OR sector) N1 governance) OR SU (health N1 (system OR sector) N1 governance) OR KW (health N1 (system OR sector) N1 governance)*
- S6 *S1 OR S2 OR S3 OR S4 OR S5*

The evolution of NG, the geographical research area, authors, topics, theoretical perspectives and method(s) used mentioned in the numerous studies were initially coded to provide a full overview of the selected studies. Then the content was used to open-code the potential NG characteristics. For instance Haarich (2018) noted some NG characteristics one of which is “*Rules and behavior: Network and governance system performance depends not only on the quantifiable activities of the network but also on underlying conditions and intangible elements that make collaboration possible, such as trust, motivation, common norms and values.*” As a result, the NG characteristic ‘rules and behavior’ was obtained.

Several similarities associations were observed after the first 20 to 25 articles. Therefore, existing codes were reused for comparable notes, or codes were completed to make them more usable. To obtain the answer to the research question, axial and selective coding methods were used to develop thematic maps in accordance with Braun and Clarke's (2006) phases of thematic analysis.

3. Results

Figure 3 displays the distribution of the publication dates of the selected papers, broken down by year. This graph depicts an upward trend in publications up to 2020. 2020 shows a decline, which appears to be continuing in 2021. However, because the search was undertaken in the midst of 2021, the overall number for that year would almost certainly have to be raised upwards.

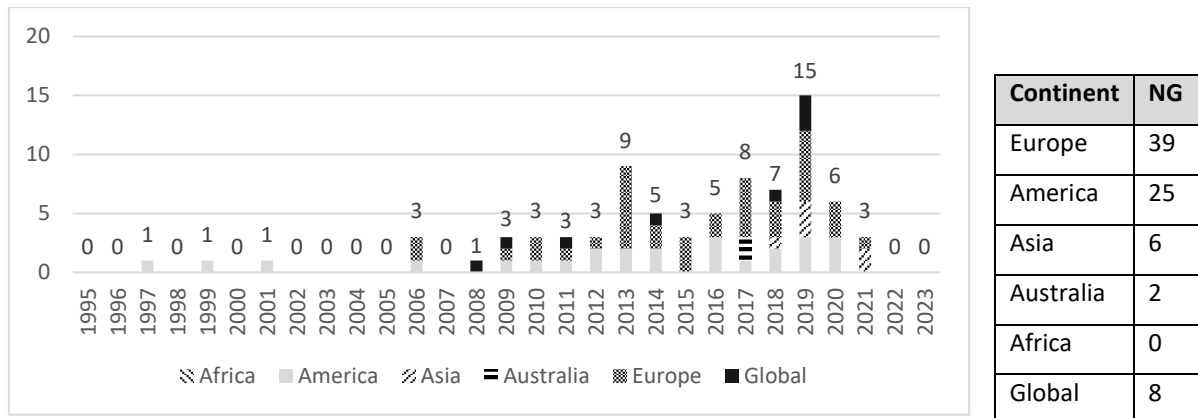


Figure 3: Publishing date by geographical research area

Furthermore, figure 3 shows that the first papers from the selection are related to American studies. The concept extended throughout Europe at the beginning of the 21st century, and it is only in the last decade that we have seen NG become the focus of study on other continents. The majority of studies were conducted in Europe, followed by North/South America and Asia.

3.1 Main Authors

When identifying the main authors in the field of NG from this collection of studies, Provan from the University of Arizona stands out as the main contributor, particularly in the context of network effectiveness in long-term healthcare practices. Provan is an author or coauthor on seven of the eighty included studies. In addition to the primary contributor with the most publications, Jones et al. (1997) are the most frequently cited NG authors.

3.2 Topics

The selected articles cover a wide range of topics related to how a network is or can be effective, how a network should be managed, what influence various factors have within the network, such as culture, trust, communication, cooperation, relationships, and leadership, and how a network emerges and develops. The top three most mentioned topics are 1. NG effectiveness (16 studies), 2. Health system governance (8 studies) and 3. Network development and reorganization (6 studies).

3.3 Theoretical Perspectives

Several articles mention the writers' theoretical perspective. Most NG publications appear to be founded on Transaction Cost Economics and Network Theory (table 1). Other theories addressed in the NG articles that were cited three or more times include Contingency Theory, Organization Theory, Resource Dependency Theory, Social Network Theory and Collaboration Life Cycle.

Table 1: Theories used

Theory	#	Theory	#	Theory	#
Network Theory	6	Collaboration Life Cycle	3	Network Effectiveness	2
Transaction Cost Economics	6	Institutional Theory	3	Network Governance Literature	2
Contingency Theory	5	Agency Theory	2	New Public Management (NPM)	2
Organization Theory	5	Collaborative Governance	2	Political Science	2
Resource Dependency Theory	4	Configuration Theory	2	Principal-Agent Theory	2
Social Network Theory	4	Game Theory	2	Public Management	2

So, the majority of the theoretical perspectives applied in our selection of NG studies are formal (Transaction Cost Economics, Organization Theory, and Resource Dependency Theory), although the informal perspective (f.i. relational contracting theory) is just as important, if not more essential (Sydow, Müller-Seitz, and Provan, 2013).

3.4 Research Methods

A (multiple) case study methodology (n=18), (structured) literature review (n=15), a mixed method (n=12) and questionnaires (n=9) are the most often used research approaches (figure 4). When these findings are compared to Sanders' research onion (Saunders *et al.*, 2019), it seems that the majority of the selected NG studies appear to be undertaken from an interpretivist and postmodernist standpoint.

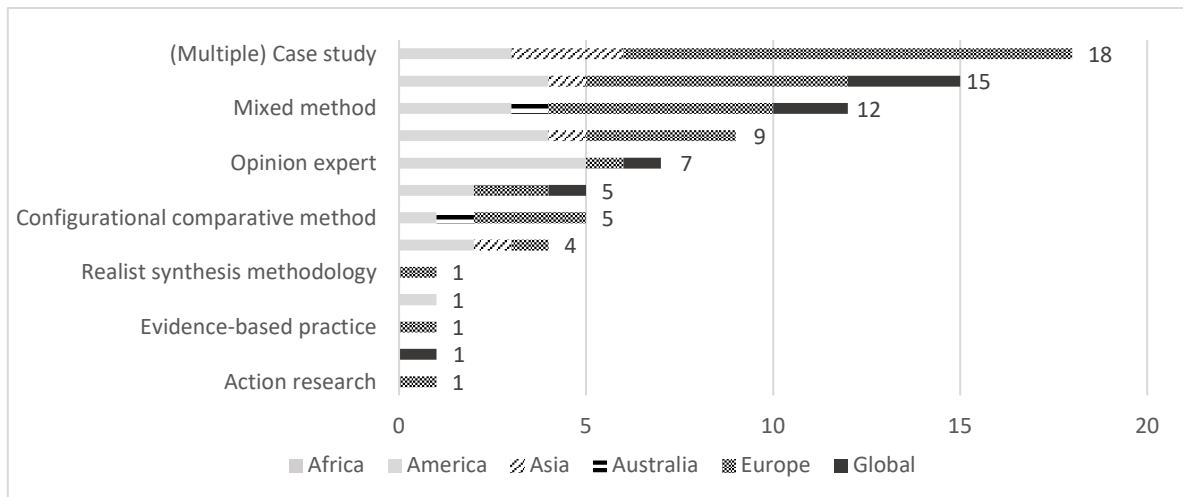


Figure 4: Research methods

3.5 NG Categories

Based on 38 discovered NG definitions, eight main NG categories have been identified (table 2): the reason why the network exists (motive), the network's unity of being (shared identity), the social way participants are connected (relations), the formalities (rules and behavior), the formal way participants are connected (structure), the network's dimensions (such as size and age), the level of perspective, and finally the roles and competencies. A word count screening is used to analyze the definitions. Table 2 lists the terms that belong to each main NG category, and the total number of terms used in all of the 38 NG definitions is shown in parenthesis. The italicized words represent words with many spelling options. For instance, the word "collaborate" appears seven times since it combines the words "collaborate," "collaborations," "collaborate," and "collaborative."

Table 2: Network Governance categories

I. Motive	contingencies (5)	<i>adapt</i> (6)	implicit (5)	goals (3)
	products (4)	services (4)	resources (3)	
II. Shared identity	<i>collaborate</i> (7)	<i>involve</i> (9)	persistent (5)	shared (4)
	together (4)	collective (3)	socially (3)	
III. Relations	<i>exchange</i> (7)	relationships (5)	open-ended (5)	engaged (4)
	different (4)			
IV. Rules and behavior	<i>contract</i> (10)	binding (4)	<i>legal</i> (6)	process (4)
V. Structure	<i>structure</i> (12)	autonomous (8)	formal (3)	horizontal (3)
	joint (3)	mechanisms (3)		
VI. Dimensions	set (7)	actors (6)	select (3)	
VII. Perspective	<i>organizations</i> (12)	firms (7)	agencies (4)	institutions (3)
	environmental (5)	public (5)	markets (3)	
VIII. Competencies	<i>coordinate</i> (10)	safeguard (5)	action (4)	creating (4)
	decision (4)	making (4)	control (3)	explain (3)

3.6 NG Characteristics

With open coding, 55 unique NG characteristics were extracted from the selected studies. Following axial coding, 35 NG characteristics remained, which could all be classified into the eight main NG categories (selective coding). Figure 5 displays the NG characteristics discovered in the studies. Each characteristic is classified in the relating NG category. For instance, Motive is depicted at the top of the figure. This might be an effort to adapt fast to the environmental Contingencies (3), a Wicked problem (4), or a shared objective, such as Sustainability (7), or Performance (8).

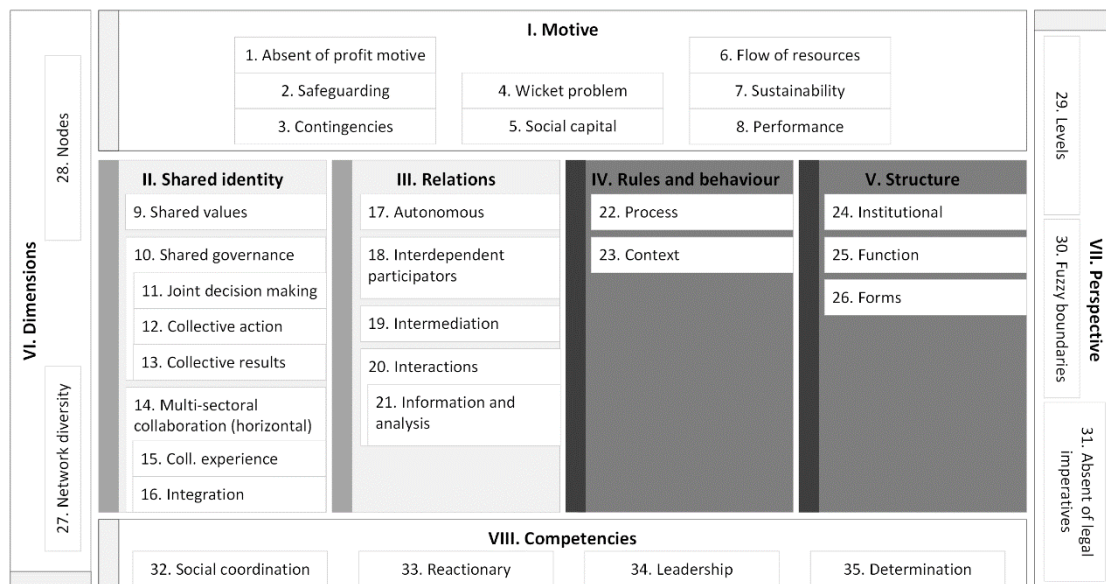


Figure 5: NG characteristics

The other characteristics that greatly influence how a network is organized and governed, are situated around the motive. We divided all characteristics into three governance styles:

1. Informal governance style characteristics (colored light gray), such as a shared identity as well as different types of relationships. This is in line with Relational Contracting Theory (Relational Governance).
2. Formal governance style characteristics (colored dark gray), such as the establishment of rules and behavior and structure. This is in line with the ideas of Transaction Cost Economics (Contractual Governance).
3. Characteristics associated with both governance styles, such as the required competencies, network dimensions and perspective.

4. Discussion and Limitations

In addition to our classification of governance styles, a clear connection has also been drawn with the governance structure of the network. The most cited source in this context is Provan and Kenis (2008). They came up with three distinct structures for effective NG. One network is controlled from a lead governance structure and the other network has a much more shared governance structure. Various intermediate forms are mentioned in the articles, the most well-known being the Network Administrative Organization (NAO) structure.

According to these findings, the governance style (relational versus contractual governance) and governance structure (lead versus shared governance) are two key NG characteristics. These could be represented by axes. In figure 6, the axis were merged to form a matrix.

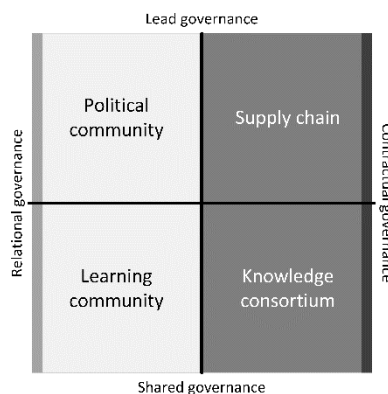


Figure 6: Network Governance matrix

Eight articles have addressed the emergence of healthcare networks. Three articles (Cristofoli et al., 2019; Daugbjerg & Fawcett, 2017; Sørensen & Torfing, 2017) state that a network emerges in the upper right corner. In this corner the network is governed by one lead party and the appointments are fixed in contracts. A supply chain could be an example for this network type.

According to Mitterlechner (2018) a network initially emerges without any form of governance and then transforms into a network where one or more nodes are given responsibility for specific tasks which are more or less contracted. This can be attributed to the two network quadrants at the bottom. Networks positioned to the lower right quadrant are networks where rules and behavior are fixed in contracts but every organization is independent. An example for this quadrant is a knowledge consortium conducting research which is funded via subsidies. Networks in the lower left corner consist of autonomic organizations, with no interest to regulate the collaboration. An example of these kind of networks is a learning community.

A relational strategy is described by Johnston et al. (2016), Cristofoli et al. (2019), and Warner & Gould (2009), in which the bonding activities are predominately carried out by one party in control. The network will prosper by gradually changing from being a trigger to a supporter. These networks place less emphasis on contracts and are more concerned with bringing relevant organizations to the table, such as local or national governments (political community).

According to Dagnino et al. (2016), a network emerges under the direction of one party. Some networks will start to form on their own as they concentrate on forging the correct partnerships. Others are more concerned with becoming structured by establishing guidelines and standards.

Thus, a network is established by a single party, as evidenced by seven out of the eight articles. Yet one study (Mitterlechner, 2018) found a network that emerged without any governance structure. There are no studies in

our selection describing the situation in which the realization of the regulatory element should be prioritized, or priority should be given to the relational cooperation components.

Although a substantial amount of the structurally selected articles served as the foundation for these findings, there are several limitations that must be acknowledged. First, the collection of articles exclusively includes works from English-language sources. Foreign language papers were not included because the reviewers would not be able to read and understand them correctly. This might account for the lack of Asian and African studies. Second, the search term is specific to research in the field of healthcare. Therefore, it is advised to use caution when extrapolating the results to other contexts, even though our final selection of studies also contains some articles conducted in other contexts than healthcare. Third, rather than being based on the chosen studies, the examples provided for each quadrant are based on personal experiences. So, we have no proof that a supply chain would always emerge and develop in the upper right quadrant.

5. Conclusion and Research Agenda

The central topic of this research was to know how network governance is organized within the healthcare sector.

With a systematic literature search we selected 80 studies that helped us identify 35 NG characteristics which we have classified in eight main NG categories: motive, shared identity, relations, rules and behavior, structure, dimensions, perspective, and competencies. Based on our findings the governance style and governance structure seem to be the key NG characteristics. With the focus on these key characteristics, we were able to divide NG into four governance quadrants. Furthermore, our findings demonstrate that healthcare networks emerge in any of the four quadrants, with a preference for networks in which a single organization takes on a leading role within the network.

These insights are useful for establishing healthcare networks. However, certain issues remain unresolved that would be helpful for governing a network. For instance, it is still unclear if the initial motivation for a healthcare network persists over time or changes. Or, as previously mentioned, the examples provided for each quadrant are based on personal experiences and it is unclear whether a network stays in a single quadrant. For example, there is no proof that a supply chain is always situated in the upper right quadrant. We are aware from personal experience that a supply chain might also start in the upper left quadrant and move toward other quadrants. This potential development will affect NG. Therefore, we suggest future research into:

- The relationship between the motive and the quadrant from which the network emerges.
- The evolution of network motives over time.
- Examining the four NG quadrants to see how networks develop over time.

Acknowledgements

We would like to acknowledge Pelgrim, T., Tamrouiti, R. and Bijsterveld, H. for their commitment and contribution to this research project.

References

- Agranoff, R. and McGuire, M. (2001) 'Big Questions in Public Network Management Research', *Journal of Public Administration Research and Theory*, 11(3), pp. 295–326. Available at: <https://doi.org/10.1093/oxfordjournals.jpart.a003504>.
- Bramer, W.M. et al. (2016) 'De-duplication of database search results for systematic reviews in EndNote', *Journal of the Medical Library Association : JMLA*, 104(3), pp. 240–243. Available at: <https://doi.org/10.3163/1536-5050.104.3.014>.
- Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101. Available at: <https://doi.org/10.1191/1478088706qp0630a>.
- Cebul, R.D. et al. (2008) 'Organizational Fragmentation and Care Quality in the U.S. Healthcare System', *Journal of Economic Perspectives*, 22(4), pp. 93–113. Available at: <https://doi.org/10.1257/jep.22.4.93>.
- Corbin, J.M. and Strauss, A. (1990) 'Grounded theory research: Procedures, canons, and evaluative criteria', *Qualitative Sociology*, 13(1), pp. 3–21. Available at: <https://doi.org/10.1007/BF00988593>.
- CPB (2019) *Verkenning middellangetermijn 2022-2025*. Available at: <https://www.cpb.nl/sites/default/files/omnidownload/CPB-Middellangetermijnverkenning-MLT-2022-2025-nov2019.pdf>.
- CPB (2020) *Actualisatie verkenning middellangetermijn 2022-2025*. Available at: <https://www.cpb.nl/sites/default/files/omnidownload/CPB-Raming-Actualisatie-MLT-2022-2025-september-2020.pdf>.
- CPB (2021) *Actualisatie verkenning middellange termijn 2022-2025*. Available at: <https://www.cpb.nl/sites/default/files/omnidownload/CPB-Raming-Actualisatie-MLT-2022-2025-maart-2021.pdf>.

- Denyer, D. and Tranfield, D. (2009) 'Producing a systematic review', in *The Sage handbook of organizational research methods*. Thousand Oaks, CA: Sage Publications Ltd, pp. 671–689.
- Glimmerveen, L. et al. (2020) *De governance van netwerkzorg ontrafeld. Waarom 'samen sturen' belangrijk én ingewikkeld is*. Available at: <https://doi.org/10.13140/RG.2.2.33747.40486>.
- Grit, K. and Dolfsma, W. (2002) 'The Dynamics of the Dutch Health Care System—A Discourse Analysis', *Review of Social Economy*, 60(3), pp. 377–401.
- Haarich, S.N. (2018) 'Building a new tool to evaluate networks and multi-stakeholder governance systems', *Evaluation: The International Journal of Theory, Research and Practice*, 24(2), pp. 202–219. Available at: <https://doi.org/10.1177/1356389018765797>.
- Isett, K.R. et al. (2011) 'Networks in Public Administration Scholarship: Understanding Where We Are and Where We Need to Go', *Journal of Public Administration Research and Theory: J-PART*, 21, pp. i157–i173.
- Johnson, N. and Phillips, M. (2018) 'Rayyan for systematic reviews', *Journal of Electronic Resources Librarianship*, 30(1), pp. 46–48. Available at: <https://doi.org/10.1080/1941126X.2018.1444339>.
- Jones, C., Hesterly, W.S. and Borgatti, S.P. (1997) 'A general theory of network governance: Exchange conditions and social mechanisms', *Academy of Management Review*, 22(4), pp. 911–945. Available at: <https://doi.org/10.5465/AMR.1997.9711022109>.
- Levallois, C. (2021) *Network format: from gexf (Gephi) to VOSViewer json format, Nocode functions*. Available at: https://nocodefunctions.com/networkconverter/network_format_converter.html (Accessed: 12 March 2022).
- Liberati, A. et al. (2009) 'The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration', *BMJ (Clinical research ed.)*, 339, p. b2700. Available at: <https://doi.org/10.1136/bmj.b2700>.
- Mass, J. and Faler, J. (2020) 'Create a Citation Graph based on Simplistic Text Analysis'. Available at: https://github.com/jaks6/citation_map (Accessed: 12 March 2022).
- McGuire, M. and Agranoff, R. (2011) 'The Limitations of Public Management Networks', *Public Administration*, 89(2), pp. 265–284. Available at: <https://doi.org/10.1111/j.1467-9299.2011.01917.x>.
- Ministry of Finance (2020) 'Naar een toekomstbestendig zorgstelsel: Brede maatschappelijke heroverweging'. Rijksoverheid. Available at: <https://www.rijksfinancien.nl/bmh/bmh-2-naar-een-toekomstbestendig-zorgstelsel.pdf> (Accessed: 31 May 2023).
- Minkman, M.M.N. (2017) 'Longing for Integrated Care: The Importance of Effective Governance', *International Journal of Integrated Care*, 17(4), p. 10. Available at: <https://doi.org/10.5334/ijic.3510>.
- Munn, Z. et al. (2018) 'What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences', *BMC Medical Research Methodology*, 18(1), p. 5. Available at: <https://doi.org/10.1186/s12874-017-0468-4>.
- OECD (2019) *Health at a Glance 2019: OECD Indicators*. Paris: Organisation for Economic Co-operation and Development. Available at: https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2019_4dd50c09-en (Accessed: 7 June 2023).
- Park, C. and Wilding, M. (2014) 'An exploratory study on the potential of social enterprise to act as the institutional glue of network governance', *The Social Science Journal*, 51(1), pp. 120–129. Available at: <https://doi.org/10.1016/j.soscij.2013.08.004>.
- Provan, K.G. and Kenis, P. (2008) 'Modes of network governance: Structure, management, and effectiveness', *Journal of Public Administration Research and Theory*, 18(2), pp. 229–252. Available at: <https://doi.org/10.1093/jopart/mum015>.
- Rouzet, D. et al. (2019) *Fiscal challenges and inclusive growth in ageing societies*. Paris: OECD. Available at: <https://doi.org/10.1787/c553d8d2-en>.
- Saunders, M. et al. (2019) 'Research Methods for Business Students' Chapter 4: Understanding research philosophy and approaches to theory development', in, pp. 128–171.
- Sydow, J., Müller-Seitz, G. and Provan, K.G. (2013) 'Managing uncertainty in alliances and networks: From governance to practice', *Managing knowledge in strategic alliances*, pp. 1–43.
- Wegner, D., Teixeira, E.K. and Verschoore, J.R. (2019) 'Modes of Network Governance': What Advances Have Been Made So Far?', *Base - Revista de Administração e Contabilidade da Unisinos*, 16(1), pp. 002–026. Available at: <https://doi.org/10.4013/base.2019.161.01>.

Leadership and Negotiation in Public Health Management: A Systematic Review of the Literature

Isabel Marques^{1,2}, Fernanda Nogueira¹, Sónia Gonçalves¹ and Raysa Geaquinto Rocha^{2,3}

¹Centre for Public Administration and Public Policies, Institute of Social and Political Sciences, Universidade de Lisboa, Lisbon, Portugal

²NECE-UBI Research Center in Business Sciences, University of Beira Interior, Covilhã, Portugal

³University of Essex, Colchester, UK

marquesenf25@gmail.com

fnogueira@iscsp.ulisboa.pt

sonia-goncalves@campus.ul.pt

raysa.geaquinto@gmail.com

Abstract: The domain of public health management has seen an increase in emerging issues that require attention to improve organizational performance. To address these challenges, this study presents a systematic review of the literature conducted between 2015 and 2023 to illuminate trends in healthcare research, including leadership and negotiation. Based on the PRISMA analysis framework developed by Liberati et al. (2009), we took an approach to assess the coverage of public health management research. Using selection criteria based on the SCOPUS database, our investigation identified 2674 articles. These publications were subjected to analysis, selecting 54 articles deemed particularly insightful and impactful. Furthermore, we developed a conceptual model using Grounded Theory that accentuates the key determinants that influence organisational performance in healthcare institutions. The main factors examined in our model include healthcare negotiation, organizational behaviour, leadership, evidence-based practices, sustainability, and corporate governance. The results of our study shed light on the intricate relationships between these determinants and their impact on overall performance in the public health sector. By elucidating these dynamics, our research provides valuable information to policymakers, administrators, and practitioners striving to achieve excellence in healthcare management. Based on our analysis, we propose an agenda for future research in public health management. This agenda seeks to address knowledge gaps, explore new approaches, and stimulate innovation in addressing healthcare organizations' complex challenges. By focusing on areas such as adaptive leadership strategies, transformative negotiation techniques, evidence-based practice, and sustainable governance models, our proposed agenda aims to catalyse advances in this field, ultimately leading to better health outcomes for individuals and communities. In conclusion, this study represents a significant contribution to public health management. Its review and the development of a conceptual model and research agenda provide stakeholders with the tools and knowledge needed to promote optimal organizational performance and drive positive change in this domain.

Keywords: Public Administration, Leadership, Negotiation, Public health, Systematic Literature review

1. Introduction

As the complexity of the challenges faced by public administration increases, there are arguments that resources are insufficient and there is a need to insert new policies to prepare the workforce better, focusing on leadership and negotiation that integrate the central sustainability challenges related to economic development and population growth. In academic studies (Moyson et al., 2018; Garland et al., 2018) and in popular rhetoric, we find numerous appeals to the different problems encountered regarding health-related issues (Wiler et al., 2019; Son et al., 2019). Proper management is of great importance for the health system. Currently, healthcare faces numerous limitations due to high costs and growing pressures to provide quality healthcare, and, in this context, managers of health organisations must develop skills, leadership skills, and knowledge beyond their clinical skills. (Gačić et al., 2023). The gap between the function they perform and the knowledge they possess can impair the performance of the healthcare organisations they lead. Therefore, managers of public sector organisations should focus on control and negotiation to improve the management process (El-Wajeh et al., 2021).

Numerous possibilities and benefits are applied to public administration arising from investigations: developing approaches that encourage collaboration between policymakers and the community (Verouden et al., 2016) and collaborative planning (Bafarasat and Baker, 2016). In addition, identifying how conflicts are managed within health services and public offices contributes to organisations' smooth functioning and improves the services' effectiveness (Pitsillidou et al., 2018).

Understanding the dynamic nature of processes is an essential task for political leaders because they, as moral agents, are called upon to shape and mediate the processes related to their administration. Intersectoral knowledge exchange promotes collaboration and facilitates knowledge sharing for better health service performance (Handberg and Werlauff, 2022). Implementing change in health and care delivery services is often

hampered by organisational micropolitics, where it becomes relevant for those leading change to develop and use political skills and behaviours to understand and mediate that policy (Mou et al., 2022). A study by Waring et al. (2022) points to the main political competencies and behaviours that aim to help change in health services: (i) personal and interpersonal qualities related to self-confidence and the ability to adapt to different audiences; (ii) strategic thinking related to the ability to understand the political landscape; (iii) communication skills to engage and influence stakeholders; (iv) networking and working in terms of accessing resources and creating linkages between stakeholders; and, (v) relational tactics for dealing with complex individuals through more direct forms of negotiation and persuasion.

Several interconnected factors support the micropolitics of formulating and implementing partnerships for the sustainability and transformation of health services, such as differences in meaning and value and structural differences in power and influence. In managing these issues, leaders must develop political listening and engagement skills, strategic assessment of the political landscape, and effective negotiation and consensus building (Waring et al., 2022). Understanding the possibilities and challenges of this effort becomes useful for those responsible for implementing programs that negotiate in uncertain environments and for policymakers who seek to guide in pursuit of sustainable performance (Embuldeniya et al., 2021). Furthermore, the sharing of leadership is negotiated in team interactions that are permeated with asymmetry arising from the professional hierarchy (Fox and Comeau-Vallée, 2020), and, sometimes, leadership is shared (or not) due to how the professional hierarchy is negotiated in interactions. Finally, leadership is to build an organisation that learns and grows. In contrast, the leader's focus is often only on organisational goals, needing to adjust to the demands of the environment to avoid frustration, which directly impacts the employee's performance (Chen et al., 2020). Unique leadership styles benefit organisations by generating greater profitability, commitment to innovation, achievement orientation, work-family balance, and control in adverse times (Vo et al., 2021; Chen et al., 2018).

In this context, this review purposes to explore the most emerging issues associated to public health management and to analyse trends in health research, such as leadership and negotiation, through a systematic literature review (SLR) over the last eight years, aiming to contribute with proposals for the future agenda.

The innovation was to adapt the PRISMA meta-analysis by Liberati et al. (2009) in order to classify these studies according to their purpose, sources of information, the form of investigation, treatment, and collection of data, participants involved, type of study and period of longitudinal investigations as well as the construction of a conceptual model that it allows understanding the relationships between the dimensions involved in the studies and that can determine the achievement of the performance of health institutions.

2. Method

The research method is the SLR. The review's objective is to analyse trends in emerging studies, including essential articles, through guidelines and strategies that increase the specificity of searches. Figure 1 displays the overall description of the review procedure.

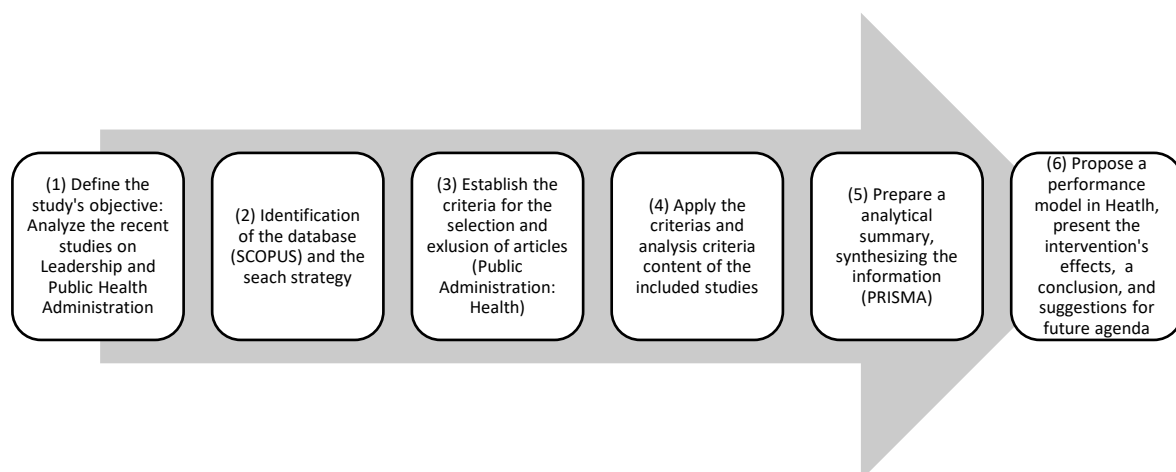


Figure 1: SLR protocol

Searching the SCOPUS database for the keywords "public administration, leadership, negotiation, health" ((TITLE-ABS-KEY ("public administration" AND "leadership" AND "negotiation" AND "health") AND TITLE-ABS-KEY ("systematic review" OR "Systematic literature review"))) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO

(LANGUAGE, "English")) AND (LIMIT-TO (SUBJAREA, "ECON")) OR (LIMIT-TO (SUBJAREA, "BUSIN")) OR (LIMIT-TO (SUBJAREA, "PSYC")) OR (LIMIT-TO (SUBJAREA, "MEDIC")) OR (LIMIT-TO (SUBJAREA, "SOCIO")) OR (LIMIT-TO (SUBJAREA, HEALTH)) resulted in 2,674 articles that, after limitations, 1,209 articles remained. Articles from the last eight years were listed: 519 articles from 2015 to 2023 (42.93% of the total articles) to highlight research trends. Then, a content analysis of the 519 articles was performed by two researchers, excluding the articles that did not specifically correspond to public health administration, resulting in 54 articles. Thus, the synthesis of the method used for selecting articles until the development of the performance model in *health* is shown in Figure 2.

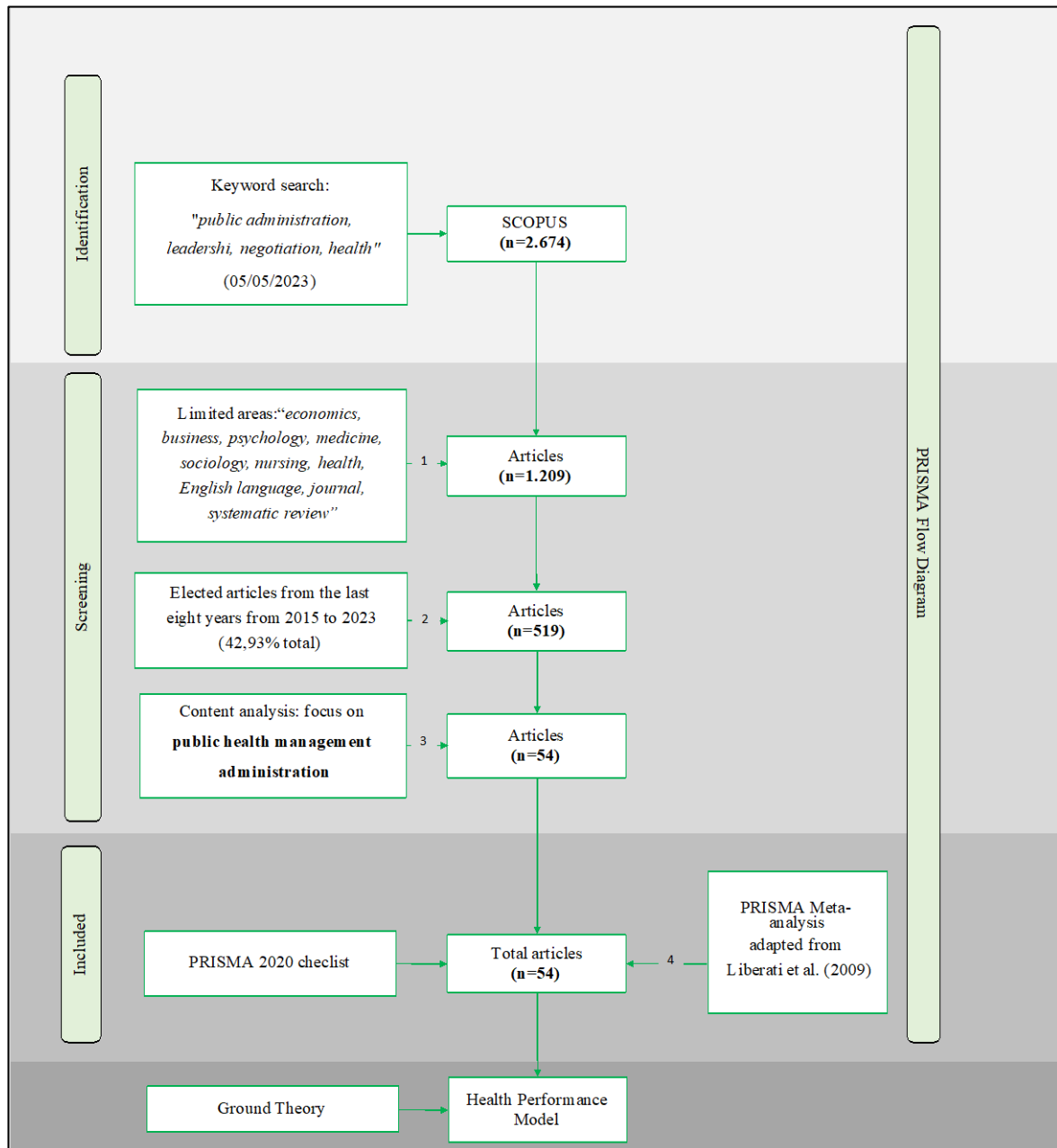


Figure 2: From sorting the articles to the conceptual model

This research applies an adaptation of the approximation meta-analysis (PRISMA) performed by Liberati et al. (2009) to the 54 Health and Public Administration studies. The protocol was developed in the field of health sciences but has already been successfully employed in public administration research (Moyson et al., 2018).

3. Results and Discussion

Of the 54 articles included in this study (Figure 3), between 2015 and 2023, 18 are from the United States (USA), seven are from England, five are from Canada, four are from Norway, three are from Sweden, two are from Italy,

two from Ghana, two from China and the others distributed equally between Turkey, Cyprus, Brazil, Australia, Germany, and Africa, which incorporate the last eight years of research. The predominance of North American articles is possible because healthcare institutions, in an increasingly competitive environment, take on entrepreneurial contours, requiring, in such a context, professional management, a characteristic panorama of this country (Heifetz, 1994).

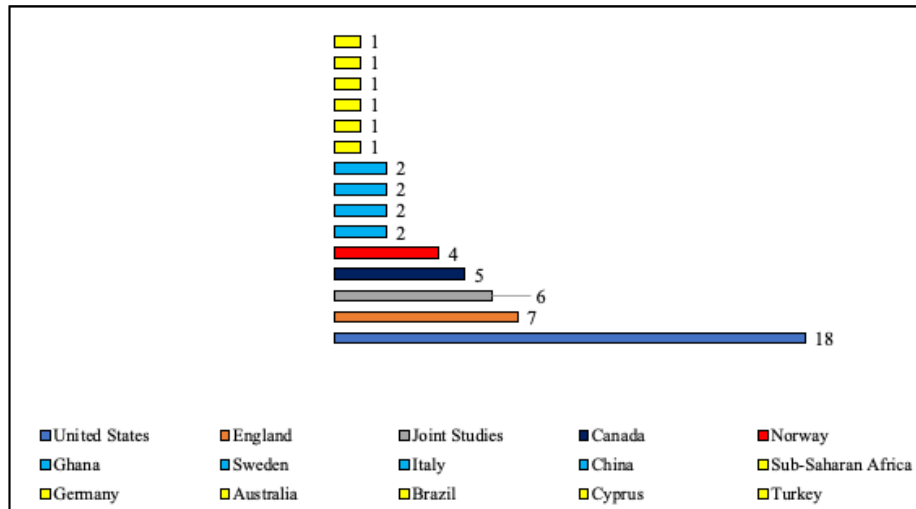


Figure 3: Distribution of studies by country

Table 1 presents the prominent authors who address the theme 'leadership and negotiation in Health'.

Table 1: Summary of the authors, by the theme 'leadership and negotiation in Health'

Category	Articles	Author (year)
Health	54	Gačić et al. (2023); Virella (2023); Naidoo & Van Wyk (2023); Blin & Dammann (2022); Mou et al. (2022); Waring et al. (2022); Wyns (2022); Kashef et al. (2022); Handberg & Werlauff (2022); Canas et al. (2021); Schulze et al. (2021); Nabyonga-Orem et al. (2021); El-Wajeh et al. (2021); Embuldeniya et al. (2021); Fox & Comeau-Vallée (2020); Kumar (2020); Johannessen et al. (2020); Phillips & Bullock (2020); Pope & Dubras (2020); Bergmark et al. (2019); Wiler et al. (2019); Son et al. (2019); Pitsillidou et al. (2018); Dall'Oglio et al. (2018); Chu & Cheung (2018); Rasanathan et al. (2018); Willging et al. (2018); Simpson et al. (2018); Barker-Ruchti et al. (2018); Perreira et al. (2018); Pankow et al. (2018); Gunderson et al. (2018); Friedman et al. (2018); Wang & Kesselheim (2018); Karaeminogullari et al. (2018); Wranik et al. (2017); Drennan et al. (2017); De Raeve et al. (2017); Jackson-Morris & Latif (2017); Iwelunmor et al. (2017); Wirtz et al. (2017); Beidas et al. (2016); Burke et al. (2016); Nygårdh et al. (2016); Green et al. (2016); Perry & Mason (2016); Addicott (2016); Eduardo et al. (2016); Mazel (2016); Schermuly Cet al. (2015); Hellman et al. (2015); Bobbio & Manganelli (2015); Fotaki & Hyde (2015).

Using a variation of the PRISMA meta-analysis by Liberati et al. (2009) (Figure 4), the articles were categorised according to the main components that focus on the research method (Table 2) with quantitative analysis discussing to (i) purpose of the study, (ii) sources of information, (ii) a form of investigation, (iv) data processing, (v) data collection, (vi) study participants, (vii) type of study, (viii) period of longitudinal investigations.

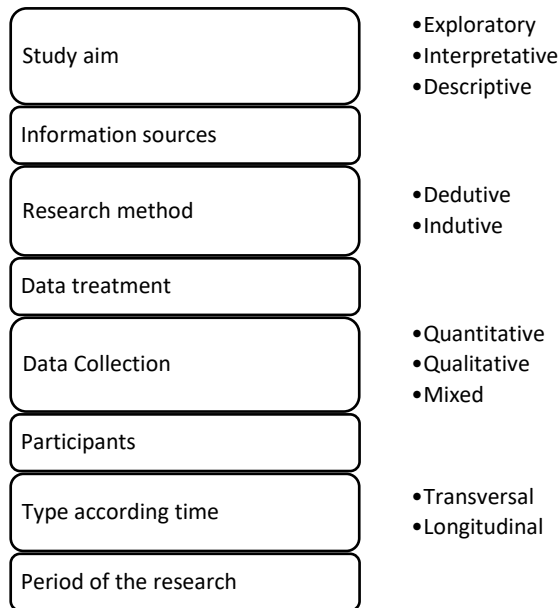


Figure 4: PRISMA Analysis for Health. Source: Adapted from Liberati et al. (2009)

Table 2 summarises the PRISMA protocol adapted from Liberati et al. (2009). As for the studies' purposes, there is a higher frequency of interpretive studies (44.44%) to the detriment of descriptive and exploratory ones (29.63% and 24.93%, respectively). Interviews are the predominant source of information (27.78% of the studies), and inductive analysis, as a form of investigation, stands out with 81.48% of the studies. Obtaining data in a qualitative format (77.78%) prevails over mixed and quantitative studies (12.96% and 9.26%, respectively). Regarding data processing, content analysis, and NVivo software use predominates (46.3%). Concerning the participants, the focus on health professionals prevails (35.19%), followed, in a balanced way, by the government (22.22%), government and health professionals (22.22%), and government and community in general (20.37%). Finally, most studies are cross-sectional (79.63%) to the detriment of longitudinal studies (20.37%); among the longitudinal studies, those that were carried out between periods of one to seven years (54.55%) prevail over those that were carried out from eight to 17 years (45.45%).

Table 2: Classification of studies according to the adapted PRISMA methodology

Component	Classification	Quantity of articles	Relative frequency (%)	Total Attendance
Study Purpose	Interpretative	24	44.44	
	Descriptive	16	29.63	
	Exploratory	14	25.93	100%
Information sources	interviews	15	27.78	
	(Not applicable)	12	22.22	
	Interviews and miscellaneous documents	8	14.81	
	miscellaneous documents	7	12.96	
	Database (SCOPUS)	7	12.96	
	Interviews and questionnaires	4	7.41	
	Questionnaires	1	1.85	100%
Form of Investigation	inductive	44	81.48	
	deductive	10	18.52	100%
Data processing	Qualitative analysis of content and NVivo (1)	25	46.30	
	Model Development	14	25.93	

Component	Classification	Quantity of articles	Relative frequency (%)	Total Attendance
	Statistical methods (linear regression, structural equations, uni and multivariate analysis, means and standard deviation, Wilcoxon test)	9	16.67	
	Miscellaneous (stepwise inductive approach, integration of themes and concepts based on category analysis, Delphi and Nominal grouping techniques, open and axial coding techniques, randomised face-to-face clustering trial with a phased rollout to assess effectiveness differential of two conditions, Actor-Network Theory as an analytical lens)	6	11.11	100%
obtaining data	Qualitative	42	77.78	
	Mixed	7	12.96	
	Quantitative	5	9.26	100%
Participants	Health professionals	19	35.19	
	Government	12	22.22	
	Government and health professionals	12	22.22	
	government and community	11	20.37	100%
Kind of study	transversal	43	79.63	
	Longitudinal	11	20.37	100%
Investigation Period	From 1 to 7 years	6	54.55	
	From 8 to 17 years old	5	45.45	100%

Of the 54 studies analysed, 19 address **Negotiation in Health**, focusing on the role and characteristics of the negotiator (Fox and Comeau-Vallée, 2020), accountability agreements (El-Wajeh et al., 2021), procurement of supplies (Addicott, 2016), policies and agreements to control tobacco consumption (Wranik et al., 2016), facilitation actions and support for changes (Wiler et al., 2019), analysis of the origins and effects of high prices of drugs on the market (Son et al., 2019), individual and organisational goals (Kwamie et al., 2017), conflicts and negotiation between government health areas and users (Natland and Hansen, 2017), funding bodies and governments (Wranik et al., 2017) and healthcare costs (Drennan et al., 2017).

The behavioural line where is evidenced in 12 articles, whose subjects revolve around levels of conflict in hospitals, which are associated with increasing errors and low levels of satisfaction, performance and employee turnover (Pitsillidou et al., 2018); Behavioural skills and inter and intrapersonal factors (Valaitis et al., 2018), responsibilities of politicians, policymakers and civil servants for the services they provide (Danhoundo et al., 2018), fidelity to the process improvement strategy (Pankow et al., 2018), building a collaborative interprofessional relationship (Waring et al., 2022).

There has been recent but growing interest in **Evidence-Based Practices**; seven studies refer to fostering evidence-based policy making (Tudisca et al., 2018), strategic use of *coaches* to support service providers (Gunderson et al. al., 2018), social determinants of health (Friedman et al., 2018) and for studies of pathologies, special groups such as the elderly, drug users and people with mental disabilities (Iwelunmor et al., 2017).

Among the investigations that address **leadership** (six articles) are business education for health professionals (Phillips and Bullock, 2020) and alignment in governance levels (Turner et al., 2018), improvement of health policies and safety (Kumar, 2020) and leadership and trust in the intra-hospital leader (Virella, 2023).

Among the articles that refer to **sustainability** as a study focus (five studies), there is one that analyses the implementation of community services and proposes a model to integrate health institutions and sustainability into their operations (Bergmark et al., 2019), an agenda for public health policymakers (Gačić et al., 2023; Rasanathan et al., 2018), development of lean principles to improve patient care (Waring et al., 2022) and production of a tool to assess and guide sustainability of national tobacco control programs (Jackson-Morris and Latif, 2017).

Collaborative governance is another theme addressed in five studies to investigate the principles of Family-Centered Care (Dall'Oglio et al., 2018), analyse and compare the governance of athletes' development (Barker-Ruchti et al., 2018), verify collaborative governance in the care of patients with HIV (Agbodzakey, 2017) and examine the experiences of social workers and the community in a nursing home (Embuldeniya et al., 2021).

4. Developing the Health Performance Model

Grounded Theory is a qualitative research style that pursues to generate new theories through some essential elements: concepts, categories and properties. The generation and development of these elements take place via an interactive procedure. That is, they are not generated a priori and subsequently tested. *Grounded Theory* emphasises learning from data rather than an existing theoretical view (Strauss & Corbin, 1990). Once the researcher has reached the theoretical saturation of the categories, he proceeds to review, classify and integrate the numerous *memos* related to the types, their properties and the relationships between them. This procedure is called *sorting* and is crucial as it combines fragmented data. The classified *memos* (*memos*) generate a conceptual structure (*framework*) with the main designs and evidences on what is being investigated. Therefore, the writing stage is *simply a product of the sorting procedure*.

Glaser (2001) describes *Grounded Theory* as "paradigmatically neutral", it can be used in positivist, interpretivist, or critical studies, and is seen as a method that can be used regardless of the epistemological posture of the researcher (Petrini and Pozzebon, 2009).

Although performance is a topic of great importance for the management of health service systems (Marchal et al., 2014), attempts by the World Health Organization (WHO, 2000) and Pan American Health Organization (PAHO, 2001) to encourage the development of performance management systems and the adoption of the results-based management model, few studies have explained the theoretical model to evaluate the performance of health interventions. Given this, considering the complex, paradoxical, and contingent nature of the performance of health interventions and the abundance of evaluative models available in the literature, the importance of theoretical delimitation on performance, and the need to explain the methodological options adopted for your evaluation. This aspect is important given the numerous definitions and lack of consensus on performance. Often, the term is used as a synonym for quality, effectiveness, or efficiency, which alone cannot represent the entire spectrum of issues covered by performance (Champgne et al., 2011), insufficient to promote health intervention development.

Performance can be understood in several ways. The goal achievement model (most used by analysts and technicians in organisations) corresponds to the functionalist, rational conceptualisation of the organisation, which was and continues to be the dominant perspective in the theory of organisations. According to this approach, an organisation exists to fulfil specific objectives, and evaluating its performance then consists of assessing the extent to which the organisation achieves its objectives (Kumar, 2020). However, there are difficulties in defining quality standards in performance indicators, and the challenges increase as services increase and the environment dynamics (Johannessen et al., 2020). In this context, Figure 5 presents the conceptual model that emerged from the RSL in the Health category, elaborated from the *Grounded Theory application*, which emphasises the importance of negotiation in health as a conductor that permeates between the dimensions of behaviour, leadership, of evidence-based practices, sustainability and corporate governance intending to improve the performance of healthcare organisations.

The objective of this study is not to generalise, but rather to particularize and understand the actors and phenomena in their complexity and uniqueness. To understand the phenomenon in greater depth, we chose to build our own model instead of testing hypotheses derived from existing theories and models.

The diagram in Figure 5 is a visual mechanism that draws the relationships between concepts addressed in this study during the analysis process. The open coding of the concepts compares the analysed units of the studies included in this review to find similarities among them. This procedure rises to the aggregation of the units, concepts according to similarities, corresponding to the formation of the first codes, and concepts generated by the researchers' interpretations (Strauss and Corbin, 1990). In this context, the information extracted from the studies was reorganized, seeking to relate similar codes and synthesizing it in the central idea (Scalabrin, 2007). The model establishes a relationship between the categories involving: the causal condition, the phenomenon, the context, the action/interaction strategies, the intervening conditions, and the consequences.

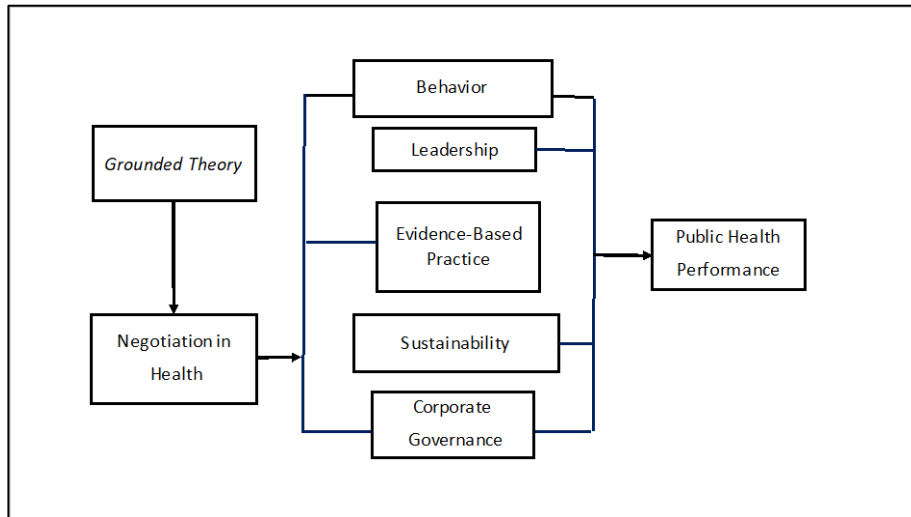


Figure 5: A conceptual model to achieve better performance in health institutions

In this way, it is extended that negotiation in health occupies a strategic place in the organisational context, adding or not power to the five other concepts and bringing institutional objectives closer to corporate strategic objectives, being a relevant factor to be understood in the context of health.

5. Conclusions and Future Agenda

Carrying out planning, organising, directing and controlling processes is essential for any organisation, including the complex that governs public administration. However, identifying problems or opportunities for improvement is just the beginning. It is necessary to define the future, the goals and how they will be achieved and, mainly, which purposes and objectives guide decisions. In response to the challenges governments face concerning different issues housed in public administration, this review intended to analyse the recent and current literature to list the main issues addressed in the health area.

Strategies to defend the quality of care and the tendency of evidence-based studies that support the formulation of agendas and recommendations to policymakers emphasising scarcity and the best allocation of available resources were found in the analysed studies. In addition, globalisation has brought social change, and the participatory elements of democracy are constantly evolving, requiring a greater level of accountability that will positively affect the performance of public organisations in the health area, given that corruption and accounting slacks have important impacts on audits of governments.

The values and objectives of public health administration seek to benefit all members of society. Therefore, partnerships between government, community and the private sector, as well as the integration of public policies must be aligned with progressive goals when creating strategies in search of solutions.

Due to the complexity surrounding the health issue, it is a systemic challenge for governments to implement changes and ensure that new policies are implemented. Therefore, several tools and approaches have been designed to encourage the formulation of policies emphasising social responsibility and improving the quality of services provided, keeping leadership and negotiation as a lens.

The implications of this RSL refer to suggestions for a future agenda in the health area, as shown in Table 3. The research contributes to the theory, highlighting the main recently published issues that present public managers with the viable option of serving as defenders of various societal interests.

Table 3: Suggestions for future investigations in public administration in the area of health

Health negotiations	- Investigate best negotiation practices for medical supplies, aiming at good practices and raising determinant factors for the reduction of prices practised today; - Analysis of information flows and development of programs that help in quotations and acquisitions shared by health institutions; - Development of an objective approach to comparing alternatives that can facilitate drug policy adoption, allowing policymakers to focus on the most viable options.

Behaviour	- Development of studies that seek to understand the reasons behind specific organisational conflicts in the health area; - Expansion of knowledge of Family-Centered Care Programs in order to increase perceived relevance in clinical practice; - Investigations that address the preparation of doctors to learn strategies and, in this way, collaborate as agents of change in public health policies; - Development and implementation of studies on transformational leadership to establish holistic ideals in health systems practices.
Leadership	- Studies that elucidate factors that influence managers' ability to support health programs, including political trends, leadership characteristics in systems and organisations, public-private partnerships, procurement and contracting, collaboration and competition, and support for organisational staff.
Evidence-based practices	- Development of indicators that are destined to become a shared resource, usable by policymakers, researchers and other stakeholders, with a crucial impact in promoting evidence-informed policy development; - Investigations that expand the use of tools and approaches designed to encourage the formulation of evidence-based policies and that provide indicators to keep political decisions guided by validated information; - Explore stakeholder perception of an evidence-based task change strategy for different pathologies.
Sustainability	- Expand the integrated change management model to help healthcare facility leaders gradually integrate sustainability into their operations.
Corporate governance	- Development of technical instruments and peer learning by policymakers (mainly outside the health sector), supporting knowledge management and sharing practises in multisectoral actions.

A limitation of this study is centred on the lack of testing of the conceived conceptual model, which can generate new health investigations. Accordingly, for future systematic investigations, we suggest the maintenance of the evolutionary focus, the use of the Prisma Method for classifying studies, and the Grounded Theory for formulating conceptual models allied to RSL.

Acknowledgements

This work was supported by Portuguese national funds through FCT - Fundação para a Ciência e a Tecnologia, under project UIDB/00713/2020 and UIDB/04630/2020.

References

- Addicott, R. (2016) 'Challenges of commissioning and contracting for integrated care in the national health service (NHS) in England', *Australian Journal of Primary Health*, 22(1), pp. 50-54.
- Agbodzakey, JK (2017) 'Ryan white CARE act and collaborative governance re-examined: The south florida experience', *Public Organization Review*, 17(2), pp. 293-314.
- Bafarasat, AZ and Baker, M. (2016) 'Building consensus for network power some reflections on strategic spatial planning in the north west region of England', *Environment and Planning C: Government and Policy*, 34(5), pp. 900-926.
- Barker-Ruchti, N., Schubring, A., Aarresola, O., Kerr, R., Grahn, K., and McMahon, J. (2018) 'Producing success: A critical analysis of athlete development governance in six countries', *International Journal of Sport Policy and Politics*, 10(2), pp. 215-234.
- Bergmark, M., Bejerholm, U., and Markström, U. (2019) 'Implementation of evidence-based interventions: Analysing critical components for sustainability in community mental health services', *Social Work in Mental Health*, 17(2), pp. 129-148.
- Champagne, F. et al. (2011) Evaluation in the field of health: concepts and methods. In: Broussele, A. et al. (Org.) Health assessment concepts and methods. Rio de Janeiro: Fiocruz, pp. 19-40.
- Chen, M.-Y. and Kao, C.-L. (2020) 'Women on boards of directors and firm performance: the mediation of employment downsizing', *International Journal of Human Resource Management*.
- Chen, S., Fang, HC, MacKenzie, NG, Carter, S., Chen, L. and Wu, B. (2018) 'Female leadership in contemporary Chinese family firms', *Asia Pacific Journal of Management*.
- Dall'Oglio, I., Di Furia, M., Tiozzo, E., Gawronski, O., Biagioli, V., Di Ciommo, VM, . . . and Raponi, M. (2018) 'Practices and perceptions of family centered care among healthcare providers: A cross-sectional study in a pediatric hospital', *Journal of Pediatric Nursing*, 43, pp. e18-e25.

- Danhoundo, G., Nasiri, K. and Wiktorowicz, ME (2018) 'Improving social accountability processes in the health sector in sub-Saharan Africa: A systematic review', *BMC Public Health*, 18(1).
- Drennan, VM, Gabe, J., Halter, M., de Lusignan, S. and Levenson, R. (2017) 'Physician associates in primary health care in England: A challenge to professional boundaries?', *Social Science and Medicine*, 181, pp. 9-16.
- El-Wajeh, YAM, Askari, G., Gordji, ME and Mohammed-Ali, RI (2021) 'Elementary introduction to game theory, rationality and hyper-rationality decision-making: Optimising a surgeon's negotiation strategies', *British Journal of Surgery*, 108 (8), pp. E262-E263.
- Embuldeniya, G., Gutberg, J., Sibbald, SS and Wodchis, WP (2021) 'The beginnings of health system transformation: How Ontario health teams are implementing change in the context of uncertainty', *Health Policy*, 125 (12), pp. 1543-1549. Available at: <https://doi.org/10.1016/j.healthpol.2021.10.005>.
- Fox, S. and Comeau-Vallée, M. (2020) 'The negotiation of sharing leadership in the context of professional hierarchy: Interactions on interprofessional teams', *leadership*, 16 (5), pp. 568-591.
- Friedman, EE, Dean, HD and Duffus, WA (2018) 'Incorporation of social determinants of health in the peer-reviewed literature: A systematic review of articles authored by the national center for HIV/AIDS, viral hepatitis, std, and tb prevention', *Public Health Reports*, 133(4), pp. 392-412.
- Gačić, J., Milojević, S., Knežević, S. and Adamović, M. (2023) 'Financial literacy of managers in Serbian health care organisations as a path to sustainability', *Sustainability (Switzerland)*, 15 (7).
- Garland, R., Tambini, D. and Couldry, N. (2018) 'Has government been mediatised? A UK perspective', *Media, Culture and Society*, 40(4), pp. 496-513.
- Glaser, B. (2001) 'The Grounded Theory Perspective: Conceptualisation contrasted with Description', Sociology Press, Mill Valley, CA.
- Gunderson, LM, Willging, CE, Trott Jaramillo, EM, Green, AE, Fettes, DL, Aarons, GA and Hecht, DB (2018) 'The good coach: Implementation and sustainment factors that affect coaching as evidence-based intervention fidelity support', *Journal of Children's Services*, 13(1), pp. 1-17.
- Handberg, C. and Werlauff, U. (2022) 'Cross-sectoral collaboration on policy-driven rehabilitation care models for persons with neuromuscular diseases: Reflections and behavior of community-based health professionals', *BMC Health Services Research*, 22 (1).
- Heifetz, RA. *Leadership without easy answers*. Cambridge: Harvard University Press; 1994.
- Iwelunmor J, Gyamfi J, Plange-Rhule J, Blackstone S, Quakyi NK, Ntim M... and Ogedegbe, G. (2017) 'Exploring stakeholders' perceptions of a task-shifting strategy for hypertension control in Ghana: A qualitative study', *BMC Public Health*, 17(1).
- Jackson-Morris, A. and Latif, E. (2017) 'Index of tobacco control sustainability (ITCS): A tool to measure the sustainability of national tobacco control programmes', *Tobacco Control*, 26(2), pp. 217-225.
- Johannessen, T., Ree, E., Aase, I., Bal, R. and Wiig, S. (2020) 'Exploring challenges in quality and safety work in nursing homes and home care- A case study as basis for theory development', *BMC Health Services Research*, 20 (1). Available at: <https://doi.org/10.1186/s12913-020-05149-x>.
- Kumar, S. (2020) 'Leadership through the eyes of a public health professional: A journey of 43 years', *Indian Journal of Public Health*, 64 (3), pp. 209-215.
- Kwamie, A., Asiamah, M., Schaaf, M. and Agyepong, IA (2017) 'Postings and transfers in the Ghanaian health system: A study of health workforce governance Lucy Gilson, International Journal for Equity in Health, 16 (1).
- Liberati, A., Altman, DG, Tetzlaff, J., Mulrow, C., Gotzsche, PC, Ioannidis, JPA, Clarke, M., Devereaux, PJ, Kleijnen, J. and Moher, D. (2009) 'The Prisma Statement for Reporting Systematic Review and Meta-Analysis of Studies that Evaluate Health Care Interventions: Explanation and Elaboration', *POLOS Medicine*, 6(7), pp. e1000 - 1100.
- Marchal, B. et al. (2014) 'Building on the EGIPSS performance assessment: the multipolar framework as a heuristic to tackle the complexity of performance of public service-oriented health care organisations', *BMC Public Health*, 14, pp. 378-391.
- Mou D, Mjaset C, Sokas CM, Virji A, Bokhour B, Heng M, . . . and Rosenthal, MB (2022) 'Impetus of US hospital leaders to invest in patient-reported outcome measures (PROMs): A qualitative study', *BMJ Open*, 12 (7). Available at: <https://doi.org/10.1136/bmjopen-2022-061761>.
- Moyson, S., Raaphorst, N., Groeneveld, S. and Van de Walle, S. (2018) 'Organisational socialisation in public administration research: A systematic review and directions for future research', *American Review of Public Administration*, 48(6), pp. 610-627.
- Natland, S. and Hansen, R. (2017) 'Conflicts and empowerment—a procedural perspective on the development of a partnership', *European Journal of Social Work*, 20(4), pp. 497-508.
- Pan American Health Organization (PAHO) (2001). Health in the Americas: regional overview and country profiles. Washington, DC: PAHO.
- Pankow J, Willett J, Yang Y, Swan H, Dembo R, Burdon WM, . . . and Frisman, LK (2018), 'Evaluating fidelity to a modified NIATx process improvement strategy for improving HIV services in correctional facilities', *Journal of Behavioral Health Services and Research*, 45(2), pp. 187-203.
- Petrini, M. and Pozzebbon M. (2014) 'Using Grounded Theory for Building Theoretical Models', *Management and Planning Journal*, 10 (1), pp. 1-18.
- Phillips, S. and Bullock, A. (2020) 'Longitudinal impact of Welsh clinical leadership fellowship', *Leadership in Health Services*, 33 (1), pp. 1-11.

- Pitsillidou, M., Farmakas, A., Noula, M. and Camisa, Z. (2018) 'Conflict management among health professionals in hospitals of Cyprus', *Journal of Nursing Management*, 26(8), pp. 953-960.
- Rasanathan, K., Atkins, V., Mwansambo, C., Soucat, A. and Bennett, S. (2018) 'Governing multisectoral action for health in low-income and middle-income countries: An agenda for the way forward', *BMJ Global Health*, 3.
- Scalabrin, AC (2007) 'Grounded Theory: A methodological alternative for structuring theories conceived from empirical data', pp. 1-13. www.ead.fea.usp.br/Semead/9semead/resultado_semead/.../149.pdf
- Son, K. -, Kim, C. - and Lee, T. -. (2019) 'Understanding of for whom, under what conditions and how the compulsory licensing of pharmaceuticals works in Brazil and Thailand: A realistic synthesis', *Global Public Health*, 14(1), pp. 122-134.
- Strauss, A. and Corbin, JM (1990) ' *Basics of qualitative research: Grounded theory procedures and techniques*'. Sage Publications, Inc.
- Tudisca V, Valente A, Castellani T, Stahl T, Sandu P, Dulf D, . . . and Glümer, C. (2018) 'Development of measurable indicators to enhance public health evidence-informed policy-making', *Health Research Policy and Systems*, 16(1).
- Turner, AD, Stawicki, SP and Guo, WA (2018) 'Competitive advantage of MBA for physician executives: A systematic literature review', *World Journal of Surgery*, 42(6), pp. 1655-1665.
- Valaitis, RK, O'Mara, L., Wong, ST, MacDonald, M., Murray, N., Martin-Misener, R. and Meagher-Stewart, D. (2018) 'Strengthening primary health care through primary care and public health collaboration: The influence of intrapersonal and interpersonal factors', *Primary Health Care Research and Development*, 19(4), pp. 378-391.
- Verouden, NW, van der Sanden, MCA and Aarts, N. (2016) 'Silence in interdisciplinary research collaboration: Not everything said is relevant, not everything relevant is said', *Science as Culture*, 25(2), pp. 264-288.
- Virella, PM (2023) 'Introducing the pillars of equity-oriented crisis leadership: A conceptual framework', *School Leadership and Management*. Available at: <https://doi.org/10.1080/13632434.2023.2186848>.
- Vo, LV, Nguyen, HT-H. and Le, HTT (2021) 'Do female CEOs make a difference in firm operations? Evidence from Vietnam', *Accounting and Finance*. Available at: <https://doi.org/10.1111/acfi.12634>.
- Waring J, Bishop S, Black G, Clarke JM, Exworthy M, Fulop NJ, . . . and Roe, B. (2022) 'Navigating the micro-politics of major system change: The implementation of sustainability transformation partnerships in the English health and care system', *Journal of Health Services Research and Policy*.
- Wiler, JL, Rounds, K., McGowan, B. and Baird, J. (2019) 'Continuation of gender disparities in pay among academic emergency medicine physicians', *Academic Emergency Medicine*, 26(3), pp. 286-292.
- World Health Organization (WHO) (2000). The world health report 2000: health system: Improving performance. Geneva: WHO.
- Wranik, WD, Haydt, SM, Katz, A., Levy, AR, Korchagina, M., Edwards, JM and Bower, I. (2017) 'Funding and remuneration of interdisciplinary primary care teams in Canada: A conceptual framework and application ', *BMC Health Services Research*, 17(1)

Social Responsibility Actions in Financial Institutions: A Systematic Review

Elizabeth Mayuri-Ramos¹, Geraldine Cervantes-Acuña², Angye Isabel Condori-Silva², Franklin Cordova-Buiza^{3,4}

¹Centre for Interdisciplinary Science and Society Studies, Universidad de Ciencias y Humanidades, Lima, Peru

²Business Faculty, Universidad Privada del Norte, Lima, Peru

³Research, Innovation and Social Responsibility Department, Universidad Privada del Norte, Lima, Peru

⁴Faculty of Business Sciences, Universidad Continental, Huancayo, Peru

emayuri@uch.edu.pe

N00203118@upn.pe

N00219633@upn.pe

franklin.cordova@upn.edu.pe

Abstract: There are financial institutions that do not focus on social responsibility in their management, because they focus on non-priority aspects; for this reason, it is necessary to promote it within the organizations, identifying relevant aspects. This increases customer retention, as well as the loyalty of its collaborators, which promotes persistence in companies, has a solid reputation, creates confidence among customers and investors, alleviates risks related to environmental, social and governance factors and actively contributes to sustainable development and the development of society can promote ethical practice, transparency and the existence of a community. Financials, aim to give performance without exposing the utility of the whole in its interest, preserving self-sufficient utilities, while abiding by different rules and regularizations. Therefore, the objective of the systematic review is raised in describing what has been published in the scientific literature about social responsibility actions in financial institutions between the years 2015 to 2023. The methodology used was Prisma, a systematic guide used in studies to perform reviews and meta-analyses in a strict and transparent manner, it helped to improve the quality and consistency of systematic reviews, which, in turn, contributes to decisions based on reliable evidence, the results obtained were that 35% were obtained from the DIALNET database, 24% were published between 2018 and 2021, 35% of scientific articles were found in Colombia, these have English and Spanish as their language, while the sources of information used in our systematic review correspond to the following databases: Scopus, Scielo, Dialnet, Redalyc, EBSCO and Doaj. Finally, it is determined that social responsibility actions in financial entities are of utmost relevance for financial organizations, since they help to create a positive reputation, have a significant social impact, manage non-financial risks, comply with rules, and attract and have talented employees, these practices are useful not only for society as a whole, but also for the success and sustainability of a financial organization.

Keywords: Social responsibility, Financial institutions, Banks, Sustainability

1. Introduction

In Latin America Corporate Social Responsibility (CSR) has had a great impact on organizations, especially in the ethical field, for that reason entities should seek not only profitability but also results that benefit the environment and promote social inclusion, in various studies evidencing Latin American organizations, are highly committed to social responsibility, in which its inclusive value is recognized (Borboa and Delhumeau 2018). Likewise, in Europe responsibilities impacted corporate growth in HR management, also in the visibility of its officials of what teaches the obligation of explanation, shows that focusing on them improves the understanding of the results and background (Buitrago and Pabón, 2021, Cordova-Buiza et al., 2021).

This project is based on a systematic review, which will allow us the structure that brings together and also provides the extract of a given subject, guiding to answer a question for our research analysis, because this must be done according to a predetermined delineation, its purpose is to provide a complete and objective analysis of different important research in a single file, a structured and evident appreciation of the literature from a clear search interrogation, linked to an informative project convenient to varied mechanisms and an attributive summary of the demonstration, that is why this research aims to identify what has been published in the scientific literature about social responsibility in financial institutions between the years 2015 to 2023?

Herrera et al. (2020) mention that corporate social responsibility (CSR) emerged in the 70s of the 20th century as a paradigm within a context characterized by inequalities, product of economic neoliberalism, companies apply improvement to their organizations and contribute to distinguish themselves from the rest, it began specifically in the 50 and 60 in the United States and developed on the European continent in the 90, from the

decision of the European Commission to use this term when referring to companies that manage through activities to generate greater social concern. At the beginning, financial entities published publications on environmental issues, only in compliance with labor legislation, in addition to some philanthropic actions such as making donations, founding educational institutions or supporting artistic and sports activities in the communities (Palacio, 2020; Lara and Sánchez, 2021; Espinoza-Molina et al., 2022).

In the following decades it was mandatory to carry out voluntary actions in the procedures of the companies, as well as protection for their workers, with which not only economic and operational results were sought, but also to benefit the organization and its stakeholders, years later the term CSR was defined as the responsibility of companies in the practice of policies and decisions to act and reach the goals of shared values (Vilca et al., 2022; Baptista et al., 2015). Currently, financial institutions are very committed to inclusion activities; it is also evident that it is in the financial sector where the practice of social responsibility is at a higher level compared to other sectors (Del Mar and Pérez, 2018; Huerta-Tantalean et al., 2022, Cordova-Buiza et al., 2022).

For Aguilera & Puerto (2018) mention that corporate social responsibility is understood as an ethically conducted management, especially in financial entities, where strategies and actions are privileged according to the needs of the public of interest related to the fact that in the long run they will contribute to sustainable development. Likewise, Cedeño & Bravo (2020) highlight the importance of financial institutions by pointing out that they play an extremely important role within the economic system, since their presence increases economic development and the quality of life of the community, a reality that positively affects the population's economy.

In this regard, the World Bank in 2017 conceptualizes financial inclusion as the access of customers and public of financial institutions to their products and services with value offered and in a sustainable manner, i.e. the institution is concerned that the customer can access credit offers tailored to their needs and that benefit them (Acosta, 2019). The beginning of financial inclusion materializes when accessing a bank account, at international level sixty-eight percent of gentlemen have an account; but only fifty-five percent have it operational, which leads us to calculate the number of accounts without activity, that is, approximately forty-three percent of adults have an account or deposit in a financial or other type of banking organizations, but do not make use of it, despite the benefits it provides for their development is relevant (Vargas, 2021). Muñoz et al. (2020) argue that there are two causes that drive the company to implement CSR, one of them comes from the ethical aspect and the other is based on business finances, in the first, it is argued that there must be parity between economic goals and sustainable concern for the company, The other motivation arises from the vision that social responsibility will benefit the company's image and, therefore, its economic development. As for the second cause, it is based on strategic decisions for the creation of value in products or services, as well as the recognition of its competitive advantage and the identification of the impact on its stakeholders.

Whatever the reason for the implementation of CSR in companies, they must start with a thorough analysis, because CSR actions involve financial investment, which without a strategy and clear objectives, can lead the company to expenditure, without obtaining the planned return, affecting it economically, the results of the actions of commercial sustainability of companies linked to finance provide a space for development to innovation, so it is recommended to strengthen financial responsibility strategies, in order not only to develop the company, but also improve its reputation (Del Campo et al., 2022, Riofrio-Carbajal et al., 2023).

In Peru, there has been a progressive increase in the number of financial institutions that are interested in Corporate Social Responsibility, this is the result of joint actions to inform, raise awareness, persuade and share strategies and carry out activities in order to encourage a responsible spirit, through social inclusion actions in financial companies, not only the benefit of customers and their families will be achieved, but also the effects will be seen in the improvement of corporate reputation, which will ultimately bring benefits for profitability (Vilca et al., 2022). On the other hand, Boza and Manjares (2020) mention that in the case of Ecuador, it is a nation that has a large number of companies, and the vast majority are managed under the Popular and Humanitarian Economy, a paradigm that focuses on providing solutions to the needs and problems of Ecuadorian families.

Castañó & Sanchez (2021) develop a systematic review on social responsibility determining that organizations should generate interests of their efficiency a higher return to the financial ones, maintaining their corporate prestige. In addition, another SR gives us to know how to better understand the correlation between the financial derivation of organizations and corporate social responsibility functions that predominate (Coelho et al., 2023). Finally, Párraga and Pinagote (2020) conducted their systematic review on customers who highly value these companies that, if they adapt social responsibility, also because the community has become very rigorous

and that is where each part is taken as a foundation for those capabilities that then produce only their profitability of those who are related.

The objective of this study is to describe what has been published in the scientific literature on the social obligations of financial institutions between the years 2015 to 2023; in order to promote responsible management in them, inasmuch as there are many financial institutions that do not focus on social responsibility, as they focus on aspects that are not a priority, so it is necessary to promote it within the development of society, identifying the relevant aspects that influence it, such as profitability, size of the organization.

2. Methodology

The systematic review of scientific literature was conducted based on the adaptation of the PRISMA methodology (PT Higgins & Green, 2011). The research question for the realization of the methodological process was the following: what has been written in the scientific literature on social responsibility in financial institutions between the years 2018 to 2023?

Scopus is the most important database of scientific literature, allowing access to documents and in some cases downloading full texts. Like Dialnet one of the largest bibliographic databases in the world, with the main objective of promoting Hispanic academic literature. Scielo is an online library that includes a selection of Peruvian scientific journals. Redalyc is an indexing system that adds high quality academic journals in its index, including only those that share the non-commercial publication model. EBSCO is also a database offering full articles, references and scientific journals in various fields of the natural sciences and humanities. Finally, Doaj is an online index and access point for scholarly journals of the highest caliber that has been curated by the community.

The first inclusion criterion was to choose articles that have as topics on social responsibility in financial institutions, in the Ibero-American scope. The second inclusion criterion, which consists of establishing parameters in relation to the date of publication, which in this case was from 2018 to 2023, which allowed obtaining articles that allude to the specific variable of analysis. And the third inclusion criterion, which consists of selecting Spanish as the language for better understanding of the information. It was specified that the search should consider only full text, obtaining a certain number of relevant articles.

Exclusion criteria was applied which consists of separating all types of information referring to companies or institutions of any kind that do not fit the established parameter, even though they comply with the research variable, but do not have all the characteristics that the problem is specifically looking for. Articles from years that are not in that established range from 2018 to 2023 are excluded. Articles that have been published incompletely are also excluded so that it does not make it difficult to obtain objective information for the present work.

In addition, the articles were selected according to the precision of the strategy being necessary to resort to the analysis of the abstracts, conclusions and in some cases the general content of the articles. The sensitivity of scientific articles related to obtaining relevant literature for the systematic review was reduced. Likewise, in order to avoid duplication, the bibliographic manager Mendeley was used to eliminate duplicates and automatically generate bibliographic references.

An advanced search was carried out taking into account the research question with the following phrase: "Social responsibility", "Financial inclusion" and "Financial entities". In order to detail the search for scientific literature, Boolean operators and filters were established: ("Social responsibility") AND ("Financial entities"), as well as (Financial Inclusion). The articles chosen were imported using bibliographic managers such as Mendeley in order to avoid duplication of textual citations.

In the design of the search strategy referring to the systematic review on social responsibility and financial institutions, it was intended to be as extensive as possible in order to ensure that all possible and relevant studies that allude to scientific literature have been considered in the review for its study, giving greater freedom to obtain information. However, it was necessary to maintain equity in relation to the extension and to preserve the relevance at the time of performing the search strategy. In this case, it could be perceived that by increasing the sensitivity of the search, the precision decreased and articles that were not relevant were obtained.

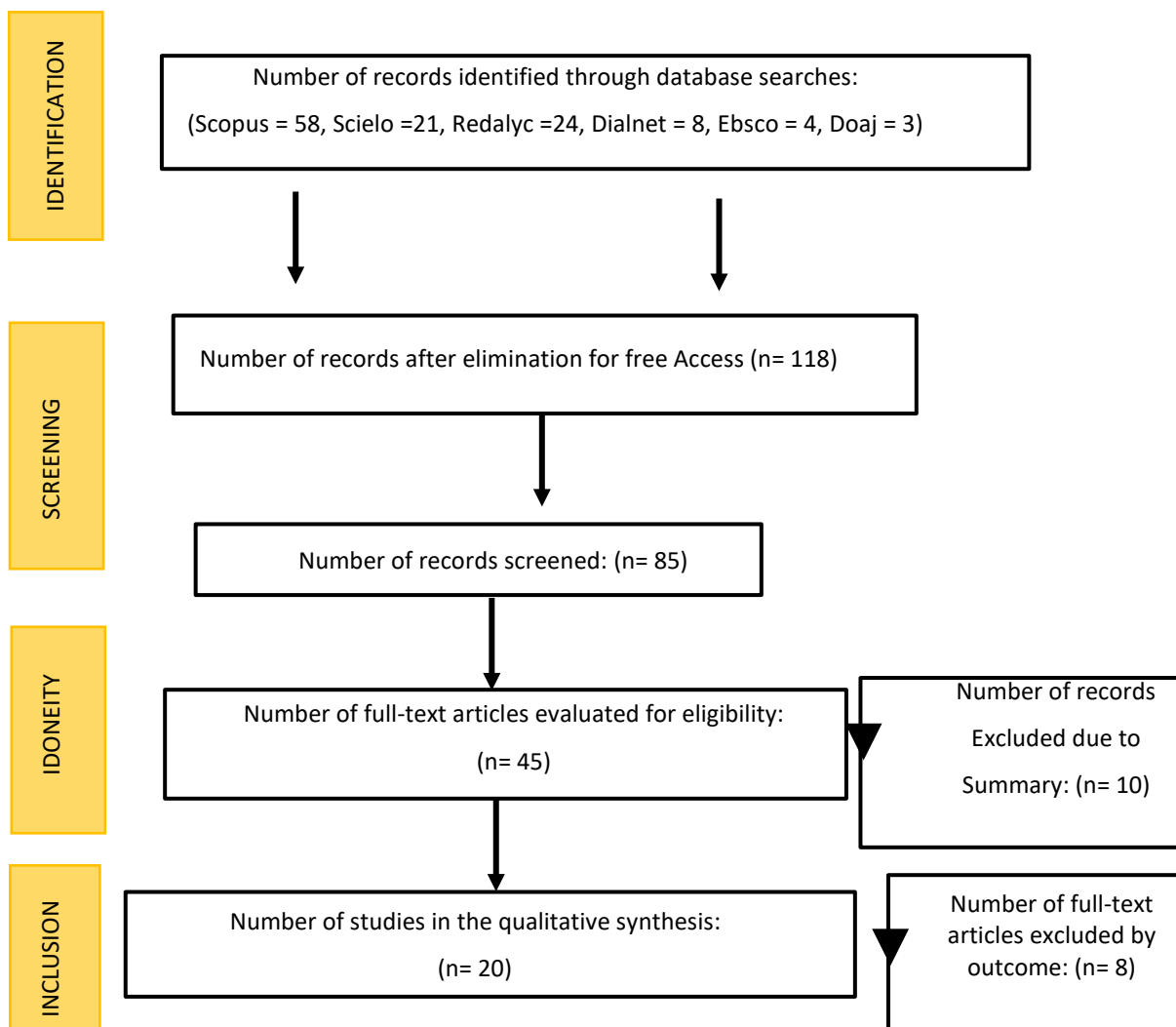
Therefore, sensitivity was considered in the identification of the number of relevant articles over the total number of existing relevant articles. Likewise, precision was considered, which for the purpose of the systematic review came to be the number of relevant articles identified out of the total number of articles identified. This

made it possible to achieve the specificity of the articles from scientific literature that meet the inclusion criteria for the development of this systematic review on social responsibility and financial institutions.

The selection of information regarding its search and collection was applied by two reviewers independently, who have full knowledge of each of the inclusion and exclusion criteria, which allowed them to know the articles that would be considered for the systematic review according to the relevance they had in the development of the same. Thus, the selection of the scientific articles was made by mutual agreement, with a participatory and democratic dialogue. In which, any difference in the process of information analysis was solved in an adequate and impartial way, since the predominant interest was to make a good systematic review that addresses the strategy according to the topic of study.

3. Results

The search for scientific articles in the databases resulted in a total of 120 scientific articles indexed in the period 2015 to 2023 that were distributed as follows: Scopus, Scielo, Redalyc, Dialnet, EBSCO and Doaj. Then, once the total number of scientific articles was considered, all those articles that did not have full text were discarded, which were a total of 51 having as a result 72 articles. Subsequently, the inclusion and exclusion criteria were put into practice, eliminating 45 articles in order to obtain the total number of 20 scientific articles with which the systematic review was carried out.



Note: Flow chart of social responsibility and financial entities, based on the search.

Figure 1: Database information according to the PRISMA methodology

Table 1: Data of the articles selected for scientific research

Nº	Data base	Título	Year	Country
1	Scielo	Reforma financiera y corporativa social responsabilidad en el sector bancario de México.	2018	Mexico
2	Dialnet	Revisión de literatura sobre los recursos humanos y la responsabilidad social empresarial	2021	Colombia
3	Dialnet	La evolución de la responsabilidad social empresarial a través de las teorías organizacionales	2019	Mexico
4	Dialnet	Responsabilidad social empresarial evolución e importancia dentro de las organizaciones.	2020	Colombia
5	Scielo	Responsabilidad social empresarial para la competitividad de las organizaciones en México	2021	Mexico
6	Doaj	Responsabilidad Social Empresarial y percepción de los clientes de los Bancos Comerciales en Perú.	2022	Venezuela
7	Redalyc	Percepción de los estudiantes de Ciencias Económicas y Sociales de la Universidad de Los Andes con relación a la Responsabilidad Social Empresarial	2015	Venezuela
8	Ebsco	Reacciones hacia la publicidad de responsabilidad social corporativa de entidades financieras	2018	Venezuela
9	Redalyc	Crecimiento empresarial basado en la Responsabilidad Social.	2018	Colombia
10	Dialnet	Las instituciones financieras y su aporte al sector microempresarial ecuatoriano	2020	Ecuador
11	Dialnet	Responsabilidad social empresarial: inclusión financiera en el sistema bancario privado ecuatoriano	2019	Ecuador
12	Scielo	Inclusión financiera en Perú y Latinoamérica en tiempos del covid-19	2021	Peru
13	Dialnet	Relación entre responsabilidad social empresarial y rentabilidad: una revisión de literatura.	2020	Colombia
14	Scopus	Análisis de la vinculación de los resultados económico-financieros y la transparencia en materia de Responsabilidad Social Corporativa en las empresas tecnológicas	2022	España
15	Redalyc	Desafíos y nuevos escenarios gerenciales como parte de la herencia del Covid-19	2020	Venezuela
16	Scopus	La divulgación de las prácticas de responsabilidad social empresarial y el desempeño financiero de las empresas colombianas	2018	Colombia
17	Ebsco	Diagnóstico estratégico de emprendimientos de economía popular y solidaria en Ecuador	2016	Ecuador
18	Ebsco	Efecto de la responsabilidad social corporativa en la reputación de las organizaciones: una revisión sistemática.	2021	Colombia
19	Scopus	The impact of social responsibility on corporate financial performance: A systematic literature review.	2023	Portugal
20	Scielo	Indicadores de gestión financiera en pequeñas y medianas empresas en Iberoamérica: una revisión sistemática.	2021	Ecuador

Note: Figure 2 shows the number of articles obtained during the research process, we can visualize Dialnet with 35% as an important database in the analysis with the highest percentage of articles, as well as Doaj and Redalyc as the lowest in the search with 6%. Finally, Scopus, an important database in the scientific literature, was found with 18%

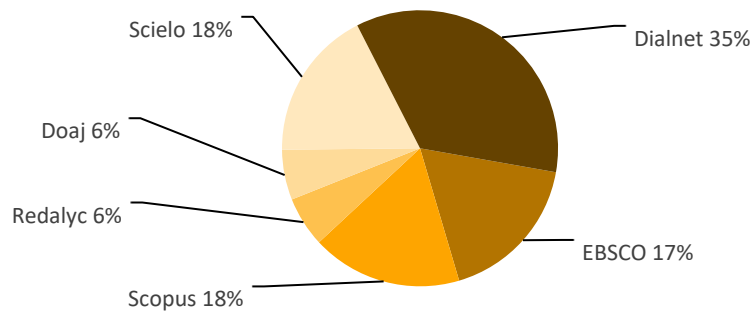


Figure 2: Database selected in the research

Note: During the research process we have selected articles between the years 2015 to 2023 related to social responsibility in financial institutions, in Figure 3 we can see the amount of research where in the year 2018 and 2021 more scientific studies were published.

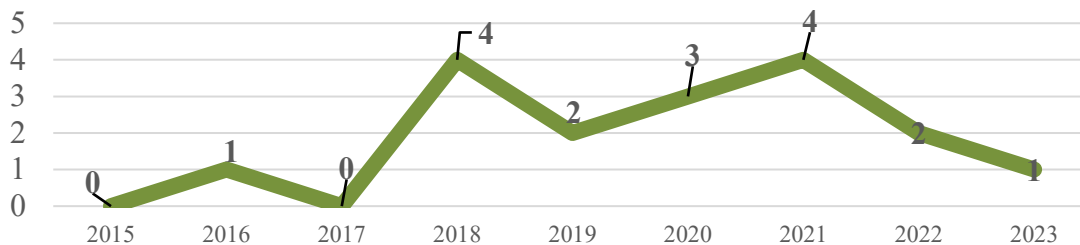


Figure 3: Selected research from 2015 to 2023

Note: In Figure 4, the search for articles in the systematic review was obtained mostly from Colombia with a total of 6 articles, as well as from Ecuador with 4, Venezuela and Mexico with 2. Finally, Spain, Portugal and our country of origin only found one article each.

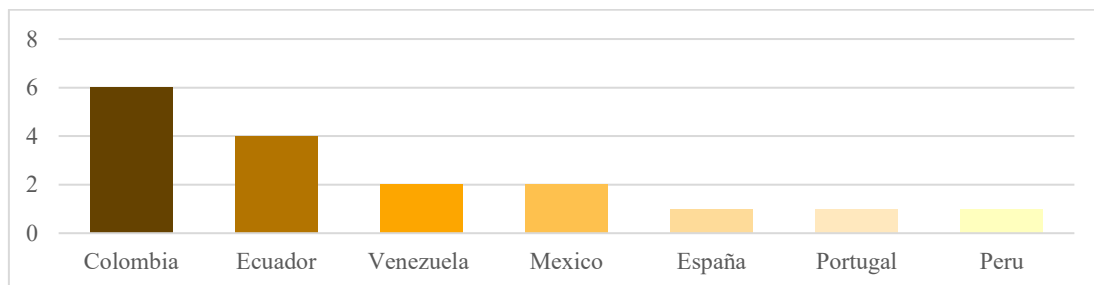


Figure 4: Selected research articles by country

4. Discussion

Social responsibility currently has been obtained in different sectors, as in the scientific review used in this study provides us with a variety of panoramas in the analysis, so that in the end they all approach the same purpose of the relevance that this gives in CSR. Financiers have different concepts about social responsibility depending on the research they apply, similar opinions and other divergent opinions.

Herrera et al. (2020) mentions that social responsibility in organizations has played and will play a fundamental role in the planning and measures implemented, what companies pursue to obtain financial income, the priority purpose is the social community, mainly for local people and local associations of interest. This coincides with the research of Lara & Sanchez (2021), since in his study on responsibility found that the company has a different position on environmental issues on issues of advocacy and attention that the company has accounted for organizational social responsibility, trying to take care of the resources we have given and realize the natural welfare of our environmental surroundings.

However, Acosta (2019) and Vargas (2021), mention that there are very few companies that do not address their inclusion in the functions of organizational social responsibility simultaneously can promote comfort to the

community. Vargas agrees with these scientific articles due to the fact that financial companies seek to be recognized worldwide by their clients to mitigate the crisis and to be a regulatory and organizational environment.

It is understood that social responsibility has increased in importance and that it has been originating with transformations that provide profitability for the financial system, however, human resources and also corporate social responsibility are differentiated into different types for the corporate regime (Borboa & Delhumenu (2018), Buitrago & Pabón (2021). Lara & Sanchez (2021) and Palacios (2020) disagree that social responsibilities in organizations are applied for the progress and originality of it, in which charitable contributions are employed. They prioritize their most outstanding growth objectives and promote their social proposals. However, Financial entities show the social responsibilities with the clients' attraction, the commitment to prioritize by showing the administrative disposition among the areas in charge will allow observing the reactions and postures of the clients (Vilca et al., 2022; Baptista & Mora, 2015 and Del Mar & Perez 2018).

Aguilera & Puerto (2018) and Cedeño & Bravo (2020) mention that when there is a business growth the variable becomes dependent and that it goes from numerous elements, but the organizational social responsibility are some of the main ones that contribute with the principle for the company, but in some financial institutions, in the area of small companies it is seen through an analysis that this is shown in corporations for the accounting sector. On the other hand, Coelho et al. (2023), makes known that the corporate structure is carried in a committed way on the basis of its profit groupings, however, during the development the variation was analyzed the amount of the institutions in fundamentals of intangible assets, simultaneously, it is considered that the corporate social responsibility increase to the regulatory, management and also governmental society that implies union of these responsibilities.

In the correlation of social responsibility Muñoz, Ruiz & Camargo (2020) mention that corporate is talked about that it is a group of operations that receive appreciation for corporations, its functions also hold effective transcendence over associations, which assert initiation and values that manage the totality of their own internal system and developments in their own correlation. Del Campo, Masa & Medina (2022) in their scientific article relate that CSR is a determination of deliberate condition, on the part, profitability has the capacity of income established that drive supreme profitability of investment and this is subsequently of the permanence of a certain time where it is given to manage the main element in the thrifty and financial organization, where it carries good alternatives.

Companies seek to excel in every aspect of social responsibility to try to be socially sustainable with their communities and add more value to their customer focus, social responsibility should be ponderable to see its good or bad impact to societies and obtain a positive value to the organization.

5. Conclusion

The objective of the research is to determine what has been written in the scientific literature regarding the actions of social responsibility in financial entities between the years 2015 to 2023. From there it is concluded that about financial social responsibility is said to be a real and enriched primordial piece in companies in different Latin American, European, or American countries, since the totality receives it with enough commitment, especially financial. or organizational identities. On the other hand, some companies do not take corporate social responsibility seriously, so most of them take measures to involve them so that they can work together to improve the natural and sustainable environment. Research shows that many organizations have made corporate social responsibility a key issue for their growth for many years.

References

- Abed, I., Hussin, N., & Haddad, H. (2022). The Moderating Effects of Corporate Social Responsibility on the Relationship between Creative Accounting Determinants and Financial Reporting Quality. *Sustainability*. <https://doi.org/10.3390/su14031195>
- Acosta Palomeque, G. R. (2019). Responsabilidad social empresarial: inclusión financiera en el sistema bancario privado ecuatoriano. *Visión de Futuro*, 23(1) <https://doi.org/10.36995/j.visiondefuturo.2019.23.01.003.es>
- Aguilera, A., & Puerto, D. (2012). Crecimiento empresarial basado en la Responsabilidad Social. *Pensamiento y Gestión*, 32.
- Anjos, G. N. dos, & Nogueira, J. M. (2022). Environmental responsibility of the banking sector: incorporation of environmental risk in the credit process. *Desenvolvimento e Meio Ambiente*, 59. <https://doi.org/10.5380/dmv.v59i0.74014>

- Baptista, M., León, M., & Mora, C. (2015). Percepción de los estudiantes de la Facultad de Ciencias Económicas y Sociales de la Universidad de Los Andes (FACES-ULA) con relación a la Responsabilidad Social Empresarial. *Visión Gerencial*, (1), 25-52.
- Borboa, E. & Delhumeau, S. (2018). Reforma financiera y la responsabilidad social empresarial en el sector bancario de México. *Revista Latinoamericana de Derecho Social*, 26. <https://doi.org/10.22201/iiij.24487899e.2018.26.11859>
- Boza, J & Manjares, N. (2016). Diagnóstico estratégico de emprendimientos de economía popular y solidaria en Ecuador. *Ingeniería Industrial*, 37(2).
- Buitrago, K. & Pabón, J. (2021). Revisión de literatura sobre los recursos humanos y la responsabilidad social empresarial. *Revista de Ingenierías Interfaces*, no. 1, pp.143-158, 2021.
- Castaño, A. & Sánchez, S. (2021). Efecto de la responsabilidad social corporativa en la reputación de las organizaciones: una revisión sistemática. *Revista Universidad y Empresa*, 23(40). <https://doi.org/10.12804/revistas.urosario.edu.co/empresa/a.8859>
- Cedeño, L. & Bravo, V. (2020). Las instituciones financieras y su aporte al sector microempresarial ecuatoriano. *Revista científica multidisciplinaria arbitrada "Yachasun,"* 4(7). <https://doi.org/10.46296/yc.v4i7.0032>
- Coba, E., Díaz, J., Zurita, E., & Proaño, P. (2017). La responsabilidad social empresarial en las empresas del Ecuador. Un test de relación con la imagen corporativa y desempeño financiero. *Ingeniería Industrial. Actualidad y Nuevas Tendencias*. Año, 5(18).
- Coelho, R., Jayantilal, S., & Ferreira, J. J. (2023). The impact of social responsibility on corporate financial performance: A systematic literature review. In *Corporate Social Responsibility and Environmental Management*. <https://doi.org/10.1002/csr.2446>
- Cordova-Buiza, F., Huaringa-Castillo, F., & Trillo-Corales, C. (2021). Corporate social responsibility actions in agribusiness: Towards sustainable community development. Paper presented at the *Proceedings of the 2021 IEEE Sciences and Humanities International Research Conference, SHIRCON 2021*. <https://doi.org/10.1109/SHIRCON53068.2021.9652243>
- Cordova-Buiza, F., Paucar-Caceres, A., Quispe-Prieto, S. C., Rivera-Garré, A. P., Huerta-Tantalean, L. N., Valle-Paucar, J. E., . . . Burrowes-Cromwell, T. (2022). Strengthening collaborative food waste prevention in peru: Towards responsible consumption and production. *Sustainability (Switzerland)*, 14(3). <https://doi.org/10.3390/su14031050>
- Ellili, N. (2023). Impact of economic, environmental, and corporate social responsibility reporting on financial performance of UAE banks. *Environ Dev Sustain*, 25, 3967–3983. <https://doi.org/10.1007/s10668-022-02225-6>
- del Campo, J., Masa, C. & Medina, A. (2022). Analysis of the link between economic and financial results and transparency regarding the Corporate Social Responsibility of technology companies. *REVESCO Revista de Estudios Cooperativos*, 142. <https://doi.org/10.5209/REVE.83720>
- de la Cuesta González, M. (2006). Responsabilidad social del sector bancario. Su contribución a un desarrollo más sostenible. *Papeles de Economía Española*, 108.
- Djalilov, K., (2023). El espíritu está dispuesto, pero las instituciones son débiles: divulgación de la responsabilidad social empresarial y el sector financiero en transición. *Autobús euroasiático*, Rev 13, 385–427. <https://doi.org/10.1007/s40821-022-00224-1>
- Duque Orozco, Y. V., Martínez Barón, D., & Botón Gómez, S. L. (2012). Una revisión a la investigación en responsabilidad social corporativa en el sector bancario. *Equidad y Desarrollo*, 18. <https://doi.org/10.19052/ed.1793>
- Duque Orozco, Y. V., & Martínez Barón, D. (2011). Responsabilidad social empresarial en la dimensión laboral: caso Bancolombia y BBVA. *Revista Facultad de Ciencias Económicas*, 20(1). <https://doi.org/10.18359/rfce.2191>
- Espinoza-Molina, J., Paucar-Cáceres, A., Silva-Cornejo, M. D. C., Quispe-Prieto, S., Acosta-Caipa, K., Chambe-Vega, E., . . . Huerta-Tantalean, L. N. (2022). Enabling risk management and adaptation to climate change through a network of peruvian universities. *Sustainability (Switzerland)*, 14(24). <https://doi.org/10.3390/su142416754>
- Flórez, A. (2020). Responsabilidad social empresarial: evolución e importancia dentro de las organizaciones. *Revista Colombiana de Contabilidad - ASFACOP*, 8(15).
- García, M., & Pérez, A. (2018). Reactions to the corporate social responsibility advertising of financial entities TT - Reacciones hacia la publicidad de responsabilidad social corporativa de entidades financieras. In *UCJC Business and Society Review* (Issue 60).
- Herrera, J., Vásquez, M., & Ochoa, E. (2020). La evolución de la responsabilidad social empresarial a través de las teorías organizacionales. *Visión de Futuro*, 24(2) <https://doi.org/10.36995/j.visiondefuturo.2020.24.02.003.es>
- Huerta-Tantalean, L. N., Quispe-Prieto, S. C., & Cordova-Buiza, F. (2022). Strategies to fight hunger and malnutrition in latin america. [Estrategias de lucha contra el hambre y la desnutrición en Latinoamérica] *Gaceta Sanitaria*, 36(3), 291. <https://doi.org/10.1016/j.gaceta.2021.11.001>
- Kliksberg, B. (2012). Reflexiones sobre la responsabilidad social corporativa en el siglo XXI. In *Reflexiones sobre la responsabilidad social corporativa en el siglo XXI*, 2012, ISBN 978-84-9012-060-6, págs. 47-68.
- Lara, I & Sánchez, J. (2021). Responsabilidad social empresarial para la competitividad de las organizaciones en México. *Mercados y Negocios*, 43. <https://doi.org/10.32870/myn.v0i43.7546>
- Lizarzaburu, E., & Del Brio, J. (2016). Responsabilidad social corporativa y reputación corporativa en el sector financiero de países en desarrollo. *Journal Globalization, Competitiveness and Governability*, 10(1). <https://doi.org/10.3232/GCG.2016.V10.N1.02>
- Martin, V., & Reyes, G. (2020). Desafíos y nuevos escenarios gerenciales como parte de la herencia del covid-19. *Revista Venezolana de Gerencia*, 25(90). <https://doi.org/10.37960/rvg.v25i90.32413>

- Morell, E. (2019). Responsabilidad Social Empresarial: una radiografía sobre la situación actual de los grandes contribuyentes del sector comercial de la ciudad de Pilar. *Revista Internacional de Investigación en Ciencias Sociales*, 15(2), p. 339-362.
- Muñoz, N., Ruiz, L. & Camargo, D. (2020). Relación entre responsabilidad social empresarial y rentabilidad: una revisión de literatura. *Encuentros*, 18(2).
- Palacio, A. (2020). Responsabilidad social empresarial: evolución e importancia dentro de las organizaciones. *Revista Colombiana de Contabilidad*, 8(15), 75–85.
- Párraga, S., Pinargote, N., García, C. & Zamora, J. (2021). Indicadores de gestión financiera en pequeñas y medianas empresas en Iberoamérica: una revisión sistemática. *Dilemas Contemporáneos: Educación, Política y Valores*. <https://doi.org/10.46377/dilemas.v8i.2610>
- Riofrio-Carbajal, M., Olavarria-Benavides, H. L., Robles-Fabián, D. A., & Cordova-Buiza, F. (2023). New tourist needs and perceptions on sustainability during the pandemic: An analysis of Paracas national reserve, Peru. *Innovative Marketing*, 19(1), 37-47. [https://doi.org/10.21511/im.19\(1\).2023.04](https://doi.org/10.21511/im.19(1).2023.04)
- Tandelilin, E. and Usman, B. (2023), "Toward a better understanding of social impact, CSR reporting and firm performance: a look at the ASEAN banking industry", *Social Responsibility Journal*, Vol. 19 No. 3, pp. 579-600. <https://doi.org/10.1108/SRJ-04-2021-0167>
- Salazar, E., & Gutiérrez, B. (2018). La divulgación de las prácticas de responsabilidad social empresarial y el desempeño financiero de las empresas colombianas. *Espacios*, 39(50).
- Vargas, A. (2021). Inclusión financiera en Perú y Latinoamérica en tiempos del COVID-19. *Quipukamayoc*, 29(60). <https://doi.org/10.15381/quipu.v29i60.19775>
- Vilca, M., Vilca, N., Vilca, A. & Armas, M. (2022). Responsabilidad Social Empresarial y percepción de los clientes de los Bancos Comerciales en Perú. *Revista Venezolana de Gerencia*, 27(100). <https://doi.org/10.52080/rvgluz.27.100.29>

Social Responsibility Leadership in the Banking Sector in Times of Pandemic

Elizabeth Mayuri-Ramos¹, Pamela Liset Villanueva-Vasquez², Yuri Vanessa Conde-Beltran³ and Franklin Cordova-Buiza^{4,5}

¹Centre for Interdisciplinary Science and Society Studies, Universidad de Ciencias y Humanidades, Lima, Peru

²Business Faculty, Universidad Privada del Norte, Lima, Peru

³Humanities Department, Universidad Cesar Vallejo, Lima, Peru

⁴Research, Innovation and Social Responsibility Department, Universidad Privada del Norte, Lima, Peru

⁵Faculty of Business Sciences, Universidad Continental, Huancayo, Peru

emayuri@uch.edu.pe

N00248367@upn.pe

yconde@ucv.edu.pe

franklin.cordova@upn.edu.pe

Abstract: The present work is a research on social responsibility in the financial sector, considering that social responsibility has achieved great notoriety since the end of the last century, both in the business, academic and social fields, basically due to the Internet, the globalization of the economy and policies increasingly focused on the interests of individuals involved with the companies, considering that the banking sector had to implement and reinforce fundamental aspects to survive the pandemic. The objective of this study is to determine the corporate social responsibility initiatives within the financial sector, to analyse the strategies implemented to provide timely responses to the economic reactivation in the face of the pandemic and to determine the main strategies and approaches of the financial system in the scientific literature between 2020-2023. The methodology applied is the research of scientific articles in recognized databases such as ScienceDirect, Scopus and Web of Science, where we found 25 research studies included for this systematic review of which we will see the 14 countries where the information was collected. In all the countries the economies suffered significant devastation and during this period they tried to adapt to new experiences to survive the pandemic and have profitability, as part of the affectation was the economic growth, unemployment, the closing of several companies, the economic activities slowed down, the expenses in elements of health services and protection increased, among others, besides the greater collaboration was sought between the governments and the banking institutions to put in practice measures of economic support, then it is concluded that financial institutions managed to change consumer priorities by adapting to digital technology ensuring that transactions are safe and reliable in order to avoid contagions and crowds, digitized financial services have the benefit of reaching millions of people and businesses, most research recommended that the financial system keep constant track of the prospects for improvement of economic activity and monitor the evolution of its customers and partners.

Keywords: Financial sector, Systematic review, Corporate governance, Economies

1. Introduction

The World Health Organization (WHO) has reported reports of pneumonia of unknown origin in Wuhan city in China, the pandemic virus COVID 19 spread rapidly, this has been an unexpected event that resulted in negative and huge consequences in various sectors, the outbreak of a global epidemic has spread worldwide, spreading unchecked and severely in many countries, affecting the economy (World Health Organization, 2020).

In the different countries, the economies suffered significant damage, which was mainly reflected at the level of an impact on economic growth, unemployment increased, several companies closed, economic activities slowed down, spending on health and protection services increased, among others, probably affecting the movements of the financial services market, the banking sector was also affected by the impact of the COVID-19 pandemic, the banking stability crisis can be mitigated by an increase in social capital derived from social responsibility (Boubaker et al., 2023).

Banking sectors around the world were under immense stress due to the transformation of the COVID-19 situation and policy responses, most governments responded quickly to manage the economic and financial shocks by providing fiscal, monetary and macro-financial stimulus (Rizwan et al., 2020).

Companies in this sector had a decrease in profitability, resilient capital and liquidity levels, highlighting the work of entities in terms of social responsibility that they had in this stage of crisis by COVID-19, to understand the concept of corporate social responsibility we can say that it is the sum of both external and internal actions

through which it becomes co-responsible for social growth (Zhang et al., 2022; Córdova-Buiza et al., 2021; Espinoza-Molina et al., 2022).

Social responsibility practices are not new, the beginning of its discussion was in the 90s, it grew significantly after the 2000s, basically due to the Internet, the globalization of the economy and policies increasingly focused on the interests of individuals involved with companies, consider that the banking sector had to implement and strengthen fundamental aspects to overcome COVID-19 in the financial sector, to support the growth of credit and mitigate the negative impact on the economy as there was a marked increase in delinquency by customers of these institutions (Frese et al., 2023; Huerta-Tantalean et al., 2022; Riofrio-Carbajal et al., 2023).

It is important to make a systematic review to identify and analyze the role of financial sector institutions in different countries and the social responsibility they have had, as well as to examine the timely responses and forms of economic revival they had in the face of the COVID-19 pandemic. What has been written in the scientific literature about social responsibility in the banking sector in times of pandemic in the years 2020 - 2023? Corporate social responsibility is the commitment of a company that seeks the welfare of companies, buyers and workers, considering that each company is constantly growing (Tiwari et al., 2023). According to Battisti et al. (2023) indicate that social capital and stakeholder theories suggest that bank executives can intensify social responsibility to build trust with stakeholders.

We know that the shock of the COVID-19 pandemic is even worse in emerging countries, where banks serve millions of people and thousands of firms with relatively poor economic and financial capacity in a weaker political and market environment, taking into account that during the pandemic banks faced the strongest shock because they are regularly exposed to more risks than other financial institutions (e.g., interest rate, liquidity, credit, market, and reputational risk) (Rabbani et al. 2021).

The financial sector has a significant effect on the financial stability and economic development of a nation, as one of the fundamental elements of the financial sector, since banks provide services that are essential for the expansion of markets. The stability of the financial system is significantly affected by the efficiency of the banking sector (Sha et al., 2023; Cordova-Buiza et al., 2022).

The objective of this systematic review is to recognize good corporate social responsibility practices within the financial sector, analyze the strategies implemented to provide timely responses to economic revival in the face of the pandemic, and determine the main strategies and approaches of the banking system written in the scientific literature between the years 2020 - 2023.

2. Methodology

The inclusion criteria were: full-text articles, in English and Spanish, that allow the identification, evaluation and review of existing and outstanding research, with antiquity of the years 2020- 2023, according to the objective of the study and as a final article, the exclusion criteria were: theoretical review works and that are not related to the topic of study, that are not open access and outdated articles that were less than or equal to the year 2019.

The type of study or methodology used in this research is related to the variable social responsibility, so a compilation of information from previous works was used, which aims to make comparisons with the present, since when preparing a literature review there are data or results that are of contribution to the topic of study.

We used articles taken from the search for key terms using connectors such as "and" and "or" in the titles of the articles, summaries and key words, the search was carried out in 3 electronic databases such as Web of Science, which is a platform for access to multiple databases that provide information on different topics, Scencedirect, which also provides the finished text of the scientific journals published by Elsevier and is one of the main sources of information for scientific research, Scopus, which has functions that enable researchers to analyze and visualize scientific production in a more practical way, taking as a reference various bibliometric indicators, the search performed was for the periods 2020 - 2023, from any country, we worked with 30 articles found and 25 used by the author's criteria, since they are the ones that best answer the research question.

3. Results

Due to the characteristics of the study, a systematic review methodology was followed, taking into account the guidelines and standards established in the PRISMA Statement (Moher et al., 2014).

The flow chart represented in Figure 1 explains the results obtained after the systematic review performed. As part of the first search, we were presented with 145 articles. After excluding those that did not meet our parameters either because they were not open access or were not correctly related to the topic of study, 53 articles remained, which, after applying the inclusion and exclusion criteria and subsequent full-text eligibility, 33 were left, 3 of which were rejected and reduced to 30 records included for this systematic review.

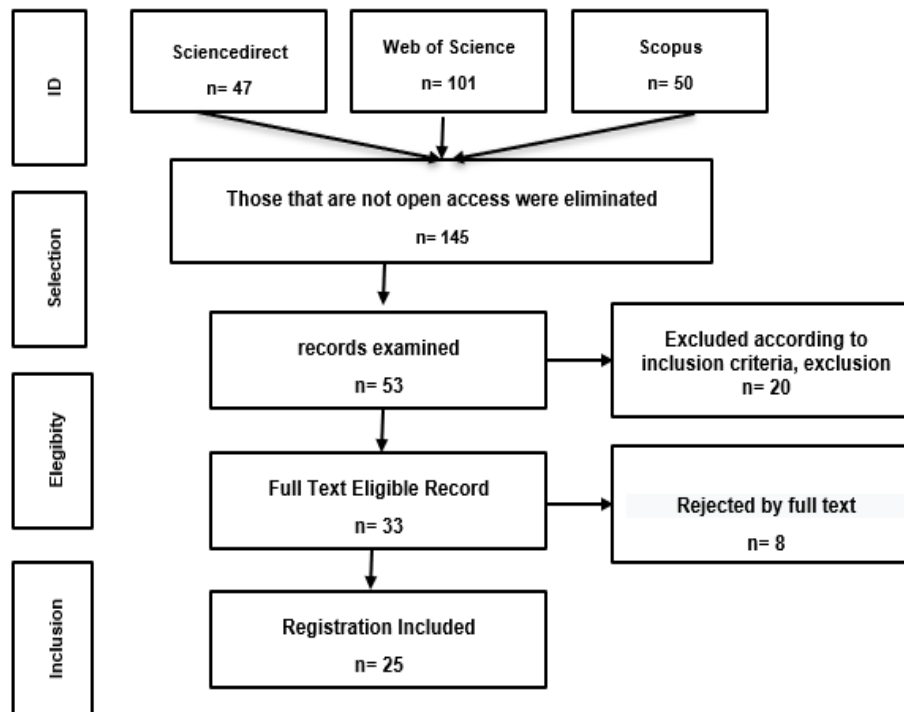


Figure 1: Prism flowchart

Table 1: Data base

Title	Journals	Data base	Year	Country
Systematic risk: The impact of COVID-19	Financial Investigation Letters	Scopus	2020	EE. UU
Spirit is willing, but institutions are weak: corporate social responsibility disclosure and the financial sector in transition	Magazine Eurasian Business	Scopus	2022	Reino Unido
Riesgo sistémico Bancario en el contexto de la pandemia de COVID-19	Sistemas	Scopus	2023	España
Prospects for green financial instruments: a case study in Hungary banking sector COVID-19	Bancos y Sistemas Bancarios	Scopus	2023	Hungría
The role of Covid-19 in bank profitability convergence: evidence from a sample of U.S. banks and club grouping.	Applied economics	Scopus	2023	EE. UU
The impact of competitive strategies on the performance of the banking sector; The mediating role of companies and Social Responsibility and Operational Excellence.	Energies	Scopus	2023	Rumania
Mobile Banking Acceptance in the Age of COVID-19	Class notes on networks and systems	Scopus	2023	Palestina

Title	Journals	Data base	Year	Country
Digitalization and financial performance of banking sectors facing COVID-19 challenges in Central and Eastern European countries.	Electronics	Scopus	2022	Rumania
The effects of corporate governance on customer recommendations: a study of the banking sector in COVID-19 times.	Knowledge management journal	Scopus	2022	Túnez
Banking sector reactions to COVID-19: the role of bank-specific factors and government policy responses.	Research in International Business and Finance	Scopus	2021	Turquía
The influence of ESG factors on the financial performance of the banking sector during the covid-19 pandemic.	Studies and Research in Economic Computing and Economic Cybernetics	Scopus	2022	Rumania
Bank performance management under COVID-19: a new approach to reverse efficiency DEA	International transactions in operations research	Scopus	2023	Vietnam
The impact of the COVID-19 pandemic on the profitability of Islamic and conventional banks.	Economies	Scopus	2023	Portugal
Business Leadership and Corporate Social Responsibility in the Post-COVID	Economies	Scopus	2023	Rusia
El impacto del COVID-19 en las perspectivas empresariales del desarrollo sostenible y la responsabilidad social corporativa en China	Medio Ambiente, Desarrollo y Sostenibilidad	Scopus	2022	China
Corporate social responsibility in family businesses: Can corporate communication affect CSR performance?	Business Research Journal	Scopus	2023	Italia
Corporate social responsibility and supply chain: a study to assess corporate hypocrisy with a focus on stakeholders.	International Journal of Finance and Economics	Scopus	2023	India
Banking sector reactions to COVID-19: the role of bank-specific factors and government policy responses.	Research in International Business and Finance	ScienceDirect	2022	Rumania
What drives U.S. stock markets during the COVID-19 pandemic? A global sensitivity analysis	Review of Borsa Istanbul	ScienceDirect	2022	EE. UU
Systemic risk and the challenge of COVID in the European banking sector	Banking and Finance Magazine	ScienceDirect	2021	Italia
COVID-19 and stock price volatility of A-share banks: from the perspective of epidemic developments in China and the US.	Global Finance Magazine	ScienceDirect	2022	china
Corporate Social Responsibility: Business Responses to the Coronavirus Pandemic (COVID-19)	SAGE Magazines	web of Science	2021	China

Title	Journals	Data base	Year	Country
Corporativo Responsabilidad social en la Pandemia de COVID-19 Período: una forma tradicional de abordar nuevos problemas sociales	Sostenibilidad	web of Science	2021	España
Corporate social responsibility (CSR) and the COVID-19 pandemic: organizational and management implications.	Strategy and management magazine	web of Science	2021	EE. UU
Impact of the COVID-19 pandemic on the banking sector: a cross-country analysis.	Multinational financial management	web of Science	2023	China

In Figure 2 we can see that the information was taken from research platforms, 3 databases called ScienceDirect, Scopus and Web of Scince, of which the Web of Scince platform predominates with 68% (17 articles extracted), Scopus with 16% (4 articles) and ScienceDirect with 16% (4 articles included in this systematic review).

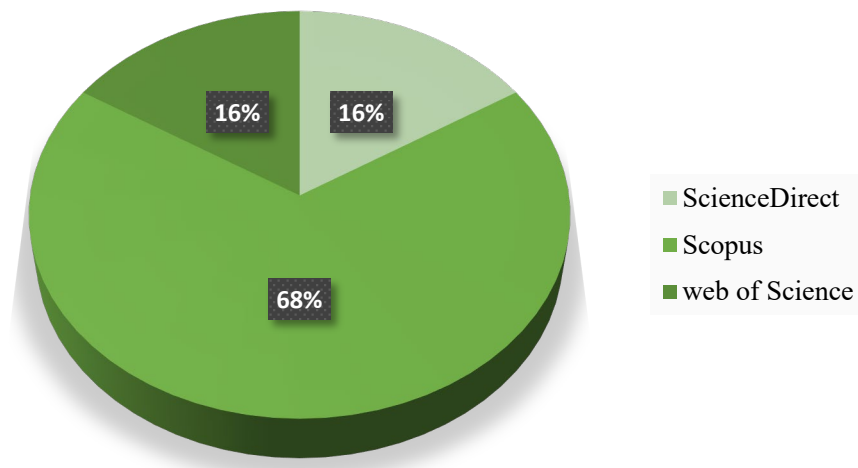


Figure 2: Database in percentage by platform.

Figure 3 shows the number of databases with the respective year of publication and the number of articles published in each year from 2020 to 2023.

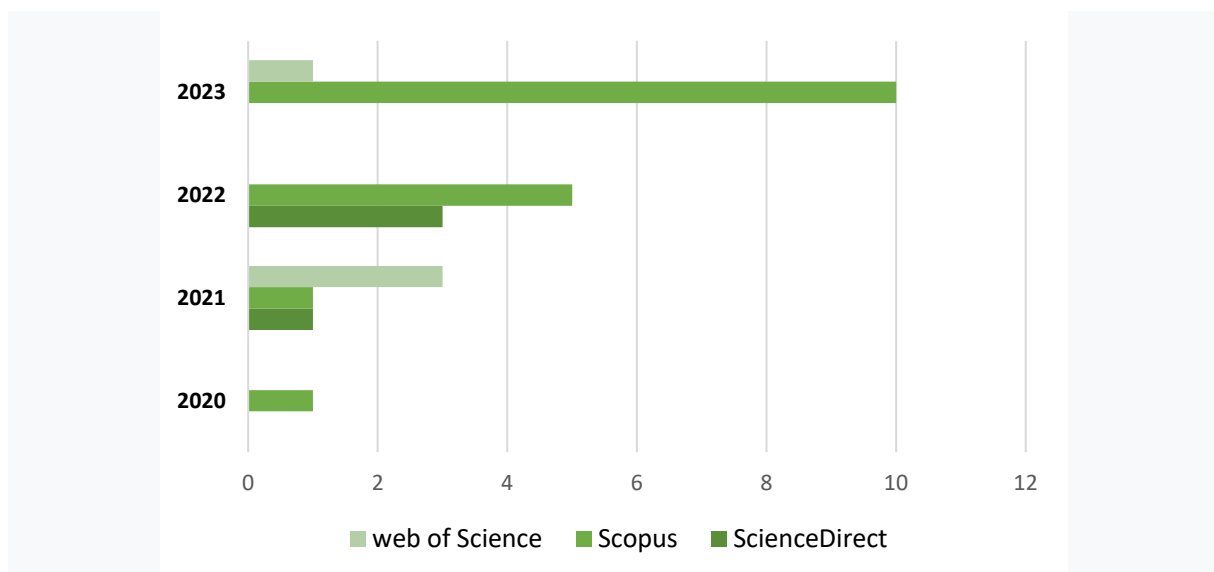


Figure 3: Number of databases with the respective year of publication

In Figure 4 we can see the number of articles published according to each country, where China and the USA predominate with a total of 5 articles each. A total of 14 countries have published articles that help this systematic review to analyze in depth the reality of social responsibility in times of pandemic.

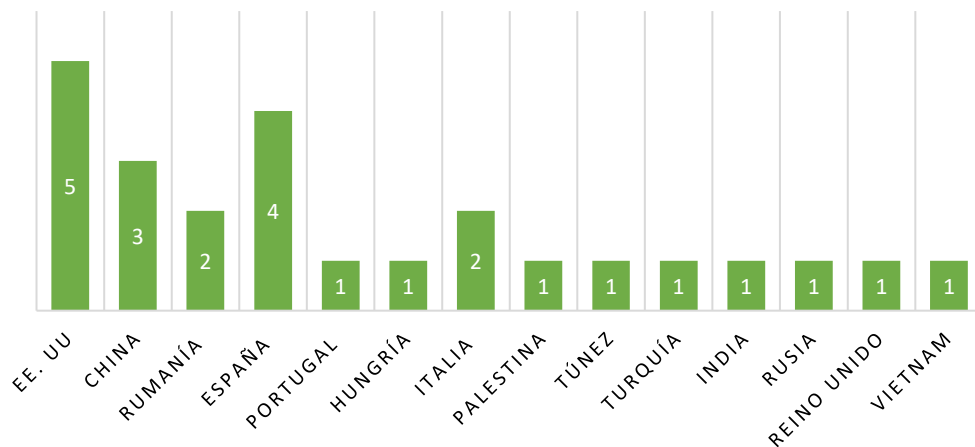


Figure 4: Quantity of articles according to the Country

4. Discussion

The global health, economic and social impacts of the coronavirus pandemic (COVID-19) were growing day by day, in recent years, first China and then worldwide, has been dealing with the effects of the COVID-19 pandemic on companies, employees, customers and communities (Mahmud and Hasan, 2021). The search was conducted in the period 2020-2023, finding 25 articles which were used for this systematic review, within the articles we found and we agree with what the authors indicate.

On the other hand, the study identified that social responsibility is a trend that has grown significantly due to the Internet and the generalization of economies. Walid (2022) indicates that crises, whether of a social, political, economic, or public health nature, continue to be a risk factor for countries around the world, highlighting that a recent example was the coronavirus, which has wreaked havoc on the global economy and the financial markets have not been immune to the pandemic, this is consistent with what Carroll (2021) and Huangg (2023) say as the results of their studies can be used in the real sector of the banking economy to develop measures to minimize systemic risk in the banking sector.

The COVID-19 crisis put Corporate Social Responsibility to the test, and the emerging evidence supports the idea that many companies are striving to restore their social responsibility initiatives in order to adapt to this crisis and meet the public's expectations. Yarovaya et al. (2022) indicates that there is every reason to believe that the COVID-19 pandemic will be a "game changer" with respect to how individuals, financial institutions, businesses and governments plan recovery strategies in the face of this crisis. However, he also comments that the COVID-19 pandemic has been compared to the Great Depression of the 1930s in the U.S. and the financial effects have been compared to the global financial crisis of 2007-2009.

On the other hand, Voicu et al. (2022) comment that the stock returns of banks with higher capitalization and deposits, more diversification, lower nonperforming loans, and larger size are more resilient to the pandemic and the reduction carried by covid-19 are diminished as the stringency of government policy reactions increases, primarily through economic responses that had this is consistent with what Shanshan et al. (2022). as in their study they examine of bank stock prices that reflect a strong indirect of the economic and financial system, banking institutions took on more responsibilities to try to reduce the idiosyncratic risk gap between the two types of banks.

The results of these investigations call for the identification of the determinants of the evolution of stock prices of countries during the presence of the COVID19 crisis and in turn the financial performance of banks at the beginning and during the pandemic.

5. Conclusion

In summary, the Covid-19 pandemic has an unprecedented macroeconomic detriment that, in turn, has caused an increase in risks to the stability of the financial sector, so this study was able to identify good practices of corporate social responsibility within the financial sector, managing to analyze the strategies implemented that gave timely responses to the economic reactivation before the pandemic, considering that financial institutions are the largest source of financing for businesses and households.

Financial services also play an important role in the creation of jobs in all sectors through access to financing, this financial stability crisis can be mitigated by an increase in social capital derived from social responsibility, which has gradually become a prominent practice in the global financial sector.

Social responsibility manages to increase the loyalty of employees and customers, to strengthen the bond between a company, future studies could extend this analysis to assess the distinctive effect of CSR in the global banking sector after the pandemic, while considering other financial and non-financial indicators.

Part of the actions adapted by governments to survive the pandemic and be profitable, then we conclude that they managed to change consumer priorities by adapting to digital technology to avoid contagion and crowding, digitized financial services have the benefit of reaching millions of people and businesses in different areas and remotely, particularly small and microenterprises.

We are currently facing a staggered recovery that is subject to significant uncertainty, which depends on each country, and in any circumstance, it must be prevented from seriously damaging the stability of the financial system, as this would make it more intense and long-lasting.

It is therefore advisable for the financial system to be attentive to the prospects of improvement in economic activity and to monitor the evolution of its partners and customers, through different mechanisms, as well as the union, information, communication and collaboration between the different sectors to detect errors and opportunities to recover what has been lost and ensure the future of households in the world.

In addition, the political responses of governments around the world are very important because these measures helped us to return to a situation of normality and to know to what extent the economies and the safety of their inhabitants could have been affected.

References

- Battisti, H., Nirino, N., Leonidou, E., & Salvi, A. (2023). Responsabilidad social corporativa en empresas familiares: ¿Puede la comunicación corporativa afectar el desempeño de la RSE? *Revista de investigación empresarial*. 162(113865). <https://doi.org/10.1016/j.ibusres.2023.113865>
- Boubaker, S., Le, T., & Ngo, T. (2023). Gestión del desempeño bancario bajo COVID-19: un nuevo enfoque de eficiencia inversa DEA. *Transacciones Internacionales en Investigación Operativa*. Transacciones internacionales en investigación operativa. 30(5), 2436-2452. <https://doi.org/10.1111/itor.13132>
- Carroll, A. (2021). Responsabilidad social empresarial (RSE) y la pandemia de COVID-19: implicaciones organizativas y de gestión. *Revista de estrategia y gestión*. 4(3), 315-330. <https://doi.org/WOS:000680961000001>
- Cordova-Buiza, F., Huaranga-Castillo, F., & Trillo-Corales, C. (2021). Corporate social responsibility actions in agribusiness: Towards sustainable community development. Paper presented at the *Proceedings of the 2021 IEEE Sciences and Humanities International Research Conference, SHIRCON 2021*. <https://doi.org/10.1109/SHIRCON53068.2021.9652243>
- Cordova-Buiza, F., Paucar-Caceres, A., Quispe-Prieto, S. C., Rivera-Garré, A. P., Huerta-Tantalean, L. N., Valle-Paucar, J. E., Burrowes-Cromwell, T. (2022). Strengthening collaborative food waste prevention in peru: Towards responsible consumption and production. *Sustainability (Switzerland)*, 14(3). <https://doi.org/10.3390/su14031050>
- Demir, E. y Danisman, G. (2021). Reacciones del sector bancario al COVID-19: el papel de los factores específicos de los bancos y las respuestas de las políticas gubernamentales. *Investigación en Negocios y Finanzas Internacionales*. <https://doi.org/10.1016/j.ribaf.2021.101508>
- Espinoza-Molina, J., Paucar-Cáceres, A., Silva-Cornejo, M. D. C., Quispe-Prieto, S., Acosta-Caipa, K., Chambe-Vega, E., . . . Huerta-Tantalean, L. N. (2022). Enabling risk management and adaptation to climate change through a network of peruvian universities. *Sustainability (Switzerland)*, 14(24). <https://doi.org/10.3390/su142416754>
- Frese, T., Korniev, A., Krayneva, R., Genial, T., Kandalow, W., & Strielkovski, V. (2023). Liderazgo Empresarial y Responsabilidad Social Corporativa en la Era Post-COVID. 11(98). <https://doi.org/10.3390/economies11030098>
- Huang, Z. (2023). Riesgo sistémico Bancario en el contexto de la pandemia de COVID-19. *Sistemas*. 11(2), 87. <https://doi.org/2079-8954/11/2/87>
- Huerta-Tantalean, L. N., Quispe-Prieto, S. C., & Cordova-Buiza, F. (2022). Strategies to fight hunger and malnutrition in latin america. [Estrategias de lucha contra el hambre y la desnutrición en Latinoamérica] *Gaceta Sanitaria*, 36(3), 291. <https://doi.org/10.1016/j.gaceta.2021.11.001>

- Liu, J., Cheng, Y., Zhou, Y., Li, X., Kang, H., y Sriboonchitta, S. (2022). Contribución al Riesgo Sistémico y Contagio de los Sectores Industriales en China: De la Crisis Financiera Global a la Pandemia del COVID-19. *Revista de matemáticas*. <https://doi.org/000789940500004>
- Mahmud, A. y Hasan, M. (2021). Responsabilidad Social Corporativa: Respuestas Empresariales a la Pandemia del Coronavirus (COVID-19). *Revistas SAGE*. <https://doi.org/WOS:000613122000001>
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. y Grupo Prisma. (2014). Ítems de referencia para publicar Revisiones Sistemáticas y Metaanálisis: La Declaración PRISMA. *Revista Española de Nutrición Humana y Dietética*, 18(3), 172-181.
- Organización Mundial de la Salud [OMS]. (2020, 10 de noviembre). Información básica sobre la COVID-19.
- Organización Mundial de la Salud [OMS]. (2020, 10 de noviembre). Información básica sobre la COVID-19.
- Rizwan, M. S., Ahmad, G., & Ashraf, D. (2020). Riesgo sistémico: El impacto de COVID-19. *Cartas de investigación financiera*. <https://doi.org/10.1016/j.frl.2020.101682>
- Rabbani, M., Abu B., Nishad N., Sitara K., Mahmood A., Habeeb U., y Shabbir A., (2021). Explorando el papel de la tecnología financiera islámica en la lucha contra las réplicas de COVID-19: la innovación social abierta del sistema financiero islámico. *Journal of Open Innovation: Technology, Market, and Complexity*. 7(2), 136; <https://doi.org/10.3390/joitmc7020136>
- Riofrio-Carbajal, M., Olavarria-Benavides, H. L., Robles-Fabián, D. A., & Cordova-Buiza, F. (2023). New tourist needs and perceptions on sustainability during the pandemic: An analysis of paracas national reserve, peru. *Innovative Marketing*, 19(1), 37-47. [https://doi.org/10.21511/im.19\(1\).2023.04](https://doi.org/10.21511/im.19(1).2023.04)
- Sha, S., Gherghina, S., Dantas, R., Rafaqat, S., Correira, A., & Mata, M. (2023). El impacto de la pandemia de COVID-19 en la rentabilidad de los bancos islámicos y convencionales. *Economías*, 11(104). <https://doi.org/10.3390/economies11040104>
- Shanshan, L. (2022). COVID-19 y la volatilidad del precio de las acciones de los bancos de acciones A: desde la perspectiva de la evolución de la epidemia en China y EE. UU. *Revista de finanzas globales*. <https://doi.org/10.1016/j.gfi.2022.100751>
- Severo, E., Ferro De Guimaraes, J. y Dellarmelin, M. (2021). Impacto de la Pandemia de COVID-19 sobre conciencia medio ambiental, consumo sostenible y responsabilidad social: Testimonio de generaciones en Brasil y Portugal. *Revista de producción más limpia*. <https://doi.org/WOS:000611946800009>
- Tiwari, M., Tiwari, T., Sam, S., Mishra, L., Rejeesh, M., & Sundaraj, V. (2023). Responsabilidad social corporativa y cadena de suministro: un estudio para evaluar la hipocresía corporativa con especial enfoque en las partes interesadas. *Revista Internacional de Finanzas y Economía*, 28(2), 1391-1403. <https://doi.org/10.1002/ijfe.2483>
- Teng, L. Vu, Q. y Marwa E. (2023). Impulsores de la estabilidad bancaria mundial en tiempos de crisis: el papel de la responsabilidad social corporativa. *British Journal Of Management*, Vol. 34, 595–622. <https://doi.org/10.1111/1467-8551.12631>
- Yarovaya, L., Brzeszczynski, L., Goodell, W., Lucey, B., y Marco, C. (2022). Repensar el contagio financiero: Mecanismo de transmisión de información durante la pandemia COVID-19. *Revista de mercados financieros internacionales, instituciones y Dinero*. <https://doi.org/S1042443122000725>
- Voicu, D., Oana, M., Bogdan Ş., Liliana, L. (2022). Reacciones del sector bancario a la COVID-19: el papel de los factores específicos de los bancos y las respuestas de las políticas gubernamentales. *Investigación en Negocios y Finanzas Internacionales*, 56 (4), 71-88. <https://doi.org/10.1016/j.ribaf.2021.101508>
- Zhang, D., Lu, S., Morse, E., & Liu, L. (2022). El impacto de la COVID-19 en las perspectivas empresariales del desarrollo sostenible y la responsabilidad social corporativa en China. *Revista de investigación empresarial*. 24(6), 8521-8544. <https://doi.org/10.1007/s10668-021-01798-y>

A Conceptual Bridge Where Critical Reflexivity Meets the Leadership Warrior Mystique Archetype

Pumela Msweli

Graduate School of Business Leadership, Midrand, University of South Africa, South Africa

mswelp@unisa.ac.za

Abstract: The objective of this paper is to present a conceptual integration of critical reflexivity and leadership archetype theory to capture the traits and characteristics of leaders leading in extreme contexts. Casting a historiometric glance at wars, battles and conflicts led by women warriors alongside their men in Africa during the trans-Atlantic trade period in the 15th to the 19th century, this paper argues that there is no context where leadership qualities are more discernible and pivotal than in extreme contexts. The paper offers the dance metaphor and archetypes as a theoretical bridge and a tool to problematise leadership performance in extreme contexts. Dance as an operative metaphor makes visible the invisible virtuosity of a leader. The paper builds an argument that dance mobilises a visual expression of mental, emotional, spiritual and physical reflexivity. Epistemically, the paper takes a stance that the warrior mystique archetypal energy of an effective leader is relative, and is imprinted in a leader's "inner theatre" within cultural contexts facilitated by reflexivity capabilities. The paper concludes by demonstrating the contingent and fluid nature of leadership in extreme contexts, and how its practices enable the development of a special kind of nimbleness, agility, kinetic, intuitive, visual, mystique warrior leadership capabilities, required to lead influentially and impactfully in transformative and liberating ways.

Keywords: Leadership, Critical reflexivity, Critical thinking, Historiometry, Extreme contexts, Warrior mystique archetype

1. Introduction

Arguably there is no context where leadership qualities are more discernible and pivotal than in extreme contexts. How leaders behave in these extreme contexts has massive effects on the broader global socio-economic system. The paper attempts to engage with the tensions and dilemmas men and women warriors leading in extreme environments in Africa face. In the arguments presented herein, the paper reflexively brings to the fore the similarities between dance and leadership. The magic of dance and its mystique effects on how leaders influence their followers through reflexivity is invoked. This is followed by a presentation of three arguments: that warrior leaders, leading in extreme contexts are powered by a deeper knowing located in the archetypal space of the human psyche which is accessed using reflexivity capabilities (expanded upon later in this paper). In this argument the connection between archetypes and metaphors (see Arrien, 2013) is problematised as leadership performance in extreme context, thereby shedding light into the leadership traits required for effective leadership performance. The transatlantic slave trade era is set out as an extreme leadership context against which historiometric data for leadership performance is analysed.

Secondly, the paper argues that, a myopic leadership approach that does not draw lessons from failures and successes of leadership from different historical contexts, becomes insufficient and unsatisfactory from the perspective of liberating Africa from all forms of violence and slavery located deep in the psyche of her people and her institutions. The paper moves the frontiers of knowledge forward by offering a conceptual bridge where the warrior archetypal metaphor meets reflexivity.

Lastly, the paper argues that leaders leading in this current time in Africa are leading in extreme contexts similar to the transatlantic slavery period. The paper illustrates that in the 21st century in Africa, geopolitical wars geopolitical wars have been waged long before the onset of the Ukrainian war. There are civil conflicts in African communities. There are industrial conflicts in Africa's institutions. And there are wars that modern day warriors are waging against poverty and inequality with all its socio-economic effects. All these contexts qualify to be referred to as extreme given that they meet Hannah, Uhl-Bien, Avolio, and Cavarretta's, (2009) criteria defining extreme context, which includes risks of severe physical, psychological or material consequences. If not, why is the African Union (AU) inviting African Leaders in contemporary Africa to free the African continent of wars, civil conflicts, humanitarian crises, human rights violations, gender-based violence, and genocide in a project titled "Silencing the Guns in Africa by the year 2020" project?

2. Extreme Context in Africa: Transatlantic Slave to Decolonial Era

Following on the footsteps of Hannah (2009), this paper defines an extreme context as an extreme event or occurrence that may result in an extensive and unbearable magnitude of physical, psychological, or material consequences to society and its institutions. Examples of extreme contexts abound in literature, including natural disasters, economic catastrophes, conflicts, battles and wars (see Hannah et al, 2009). There is no

context, where the virtuosity of the leadership dance, the capability to tap into individual and collective wisdom is more critical. In extreme context the dance is free style, non-routine, based on asymmetrical information on the battle ground, and requires high decision agency. Participating in this dance is almost like signing a death certificate.

According to Ezenwa and Udensi (2021: 143) the 400 years between 1500 and 1900 was an extreme context of unbearable pain and trauma that “*violently arrested*” Africa’s development. Scholars argue that (see Ezenwa and Udensi, 2021) slavery was enabled often by a complicitous relationship between African leaders and foreign slave traders. Dassah (2012: 97) concurs with this view, and posits that African leaders, past and present are “*complicit in the persistent fragility [of] postcolonial sub-Saharan Africa*”. With these words, Ezenwa and Udensi, paints a picture of the devastating effects of transatlantic trade:

“The plague of slavery caught Africa unawares. It tore through her very marrow and choked all attempts at advancement.”

Towards the tail end of the transatlantic slave trade, when communities of the African continent were at their highest heights of vulnerability, paralysed by fear and grief, the 1885 Berlin conference presented to, arguably, uninformed Africans a *fait accompli* new world with boundaries defined in Europe. The Berlin conference was convened to establish principles and rules for colonising Africa. In his work, Wang Shih-Tsung (1998) discusses how the Berlin Conference guided the acquisition of new territory in Africa by using any of the following modalities: (1) *conquest*; (2) *cession*; (3) *occupancy or settlement*. With these in place the scramble for Africa started. This is where the existing conflicts in Africa were entrenched. The Berlin Conference therefore legitimized the creation of boundaries in Africa. Wilber (2001) argues that boundaries constitute an artificial separation, which in a case of a border becomes a source of conflict and violence:

“...boundaries... are pure illusions – they pretend to separate what is not in fact separable....every boundary carries technological and political power, it also carries alienation, fragmentation and conflict...”. Ken Wilber (2001: 30)

Conflicts and violence persisted in the current decoloniality era, creating extreme leadership contexts. To give more depth to the picture of conflicts in Africa during the decolonial era, it should be noted that out of 54 African countries, 45 have had at least one coup attempt since 1950 (Duzor and Williamson, 2022). During the same decolonial period, there were 204 coup attempts out of which 106 were successful (Duzor and Williamson, 2022). West Africa had the highest number of coup incidents followed by Northeast Africa (McGowan, 2003). Civil wars and conflicts have caused not only a collapse of socio-economic systems, and the degradation of health and education services across the continent, but millions of lives have also been lost. This very extreme context subjects’ African people to intense physical and psychological trauma. This of course is exacerbated by poor living conditions and a heavy burden of debt.

Snippets of historical data presented later in the paper, allow us to peer into the past to witness the leadership style of warriors who led in Africa; warriors who navigated extreme contexts to victory and in some instances to defeat. Firstly, the archetype concept is defined and liken to the “inner universe” of a leader where dominant centers of consciousness or awareness abide, and then expressed in unique leadership styles and behaviour. As an empirical matter, this paper uses historic evidence to present the values and way of being of three cases of well-known warriors that led in three different eras – the trans-Atlantic, colonial rule and decoloniality eras. On the basis of the epistemic reflections of the author from a critical realism perspective, the paper takes a stance that the warrior archetypal energy of an effective leader is relative, and is imprinted in a leader’s “inner universe” within specific cultural contexts facilitated by metacognitive capabilities. The paper then unpacks the metacognitive capabilities as a conceptual bridge where the warrior archetype takes on a mystique nature to the extent that reflexivity attributes are expressed. In this manifestation the warrior mystique archetypal energy shows up in leadership not only to influence, through reflexivity practices and behaviours that impact society; and through spoken and written speech acts, but in the co-creation of the warrior dance ‘choreography’ with a team of dancers (followers), that cocreate the social order.

3. The Inner Universe of a Leader: Archetypal Energy

Conceptually, there is no agreed upon definition of leadership. In fact, there are as many definitions of leadership as the authors who define them and these, as pointed out by Kets de Vries’s (2010) run into thousands. Inspired by Wilber’s work on collective consciousness (2001); and tapping on insights from Kets de Vries’s (2010) view of leadership, the paper takes a view that effective leadership shifts its focus from a leadership role centred around a single individual, to a leadership system that requires a shared intricate,

close-knit system of leaders and followers. This system of leadership possesses capabilities and experiences that enable the achievement of goals that benefit and transform society. Leadership performance is thus predicated on the ability of a leader to identify strengths and competences of each team member; and match these competences to roles and challenges. This, as Kets de Vries (2010: 2) points out, requires identification of certain recurring behavioural patterns that depict a “complex confluence” of the leaders’ “inner theatre” including significant life experiences. These patterns as many writers have observed (see for example Adamski, 2011; Bolman and Deal, 2011; Kets de Vries, 2010; Myss, 2001) emerge out of the “inner theatre” of a leader as an archetype reflecting the role and behaviour that impacts the effectiveness/ineffectiveness of leaders within organisations.

3.1 The Archetype of Warrior Mystique Leader

While it is beyond the scope of this paper to delve deep into the history and theory of archetypes, it is important to touch on Carl Jung’s (1875-1961) contributions to the field of archetypes (see Adamski, 2011). Jung is one of the first keynote scholars who studied the concept of archetypes. Jung believed that over thousands of years of human evolution, human beings share many common experiences of the physical and social world. The collective experience leaves an imprint in the collective unconscious of all human beings and Jung called these imprints archetypes. As pointed out by Adamski (2011), Jung described the archetypes as universal inherited patterns and predispositions that help the human mind respond to, organise, or interpret the world in a particular way.

According to Arrien (2013) a leader holding the warrior energy is a model of courage, discipline, self-control, assertiveness, versatility, loyalty, and resilience. Warriors as pointed out by Arrien (2013) go to battle as a last resort, and they know when to back off and let others win. According to Bolman and Deal (2006), the leadership traits that distinguish a warrior leader from every other leader or manager is creativity, the ability to see beyond the horizon, a steely temperament, and resilience when faced with crisis. Warriors are able to construct a power base through their inner universe, allies, networks and coalitions. They welcome a challenge and are able to protect the environment when it is attacked. A warrior is not only decisive, during his or her dance in the battlefield, the warrior is an embodiment of bravery with a strong presence and personal power (Trungpa, 1984).

As much as the warrior mystique archetype is the focus of this paper, singling this energy centre should not be interpreted as meaning that a warrior in the battle field only holds one centre of power – that of a warrior. A deeper gaze into the archetype literature reveals that leaders/warriors on the literal and metaphoric battle field are those holding several archetypal energies reflecting the different roles and contexts in which their leadership dance is required. Myss (2001) for example posits that each person, is endowed with twelve primary archetypes which are part of their individual psyche. Other authors (for example Bolman and Deal, 2006) view the archetypal patterns as a hierarchical structure of dominant and not so dominant energy centers located in human psyches. Along the same line of thinking Arrien (1993) argues that there are four archetypal energies found in indigenous traditions: (1) warrior/leader; (2) healer dubbed as magician or wizard in other works (Tallman, 2003); (3) teacher; and (4) visionary. The archetype definitions cited above share a common primary theme of leadership, inner knowing and wisdom.

It is an established fact in literature that the archetypes in human psyches are not always reflected positively because each archetype comes through in different ‘shades of light’. For instance, Stein (1998: 5) puts across an evocative narrative about this subject: *“the psyche consists of many parts and centers of consciousness. In this inner universe, there is not simply one planet, but an entire solar system and more”*, Stein, 1998: 105). Myss (2001) goes on to describe the shadow aspect of an archetype using the Queen archetype as an example:

“The Queen archetype can help you assert your power, take charge of situations, delegate authority and act with benevolence. But the shadow Queen may run around barking out orders, making impossible demands, and cutting off heads!”

Myss (2001) suggest that awareness of one’s “inner theatre” and archetypal energy at play, allows one to harness the strengths and power of an archetype while mitigating the dark side of the archetype. In the same line of thinking Paul Frere, in his seminal work titled “Education: domestication or liberation?” advocates for a critical manner of thinking that “goes beyond the *deceptive appearances, to seek the raison d’etre of facts and the relationships between different facts, within the totality of which they are a part*”. (1972: 174). Understanding reality requires open mindedness and continuous revision of what is known in order to deepen learning in ways that increase integrity. In the next section the paper introduces the conceptual bridge where

critical reflexivity meets the leadership warrior mystique archetype. In this section, the concept of reflexivity as a lens through which the shadow side of the warrior archetype could be mitigated to allow the positive strengths to shine through is introduced.

4. A Conceptual Bridge Where Critical Reflexivity Meets the Leadership Warrior Mystique Archetype

Conceptual bridges have been used by scholars as conceptual tools to unify concepts, variables and methods from different disciplines in new and powerful ways to find solutions to profound societal problems. In the field of mathematics for example, scholars have witnessed how Mendel's Genetic Laws of Inheritance are explained using linear algebra. Likewise, this paper presents a theoretical bridge that links the warrior mystique archetypal dispositions to reflexivity qualities. Reflexivity is defined in literature as a metacognitive skill, a capability that manifest itself in coherent thinking, speech acts and behaviour that transforms social actors in society into more evolved state of consciousness (see for Alexander, 2018; Bourdieu, 1973; Hopkins, 1986; Nyoni, 2019; Pitsoe, Matsephe and Letseka, 2015; Pulkinen, 2018; Rennie, 2007).

Pitsoe, and Letseka (2015) define reflexivity as an essential modality to adjust the actors to situations, in ways that result in positive transformative outcomes in society. Using critical reflexivity as a theoretical lens the paper poses two questions: (1) What are the personality traits of warriors that lead in extreme contexts? (2) What are the shadow traits of these figures in relation to their leadership? With these two questions in mind, the paper spans through time and observe these leaders and conclude with what purpose this all may serve for the current decolonial epoch characterised by a different kind of extreme context – conflicts, battles and socio-economic degradation in Africa.

Table1: Reflexivity Definitions

Reflexivity definition	Source
Cultivation of a consciousness and capacity, to limit the adverse impact of inequitable distribution of power, privilege, and influence within society.	Alexander (2018)
Reflexivity enhances the capacity to produce social change and is linked to the capacity to make "unconsciously inherited dispositions conscious so that they can be transformed".	Alejandro (2021)
A creative and meaning seeking process that connects past, present, and future in a way that mediates coherent and meaningful action	Hopkins (1986: 686)
A disciplined self-reflection; self-aware reflection and analysis toward increasing richness and integrity of understanding	Finlay, 2014
"... an inclusive ecological or caring act of reflection as well as an appreciation gesture, with an explicit concern for 'otherness' and 'difference'.	Bleakley (1999: 14)
Reflexivity enables individuals to understand and adjust to the social process; modify future behaviour and then transform the social process itself; the development of the mind is predicated on reflexivity: "without reflexivity and dialogue between the personal 'I' and the social 'me' there would be nothing novel in experience". Reflexivity is a source of novelty and freedom	Babcock (1980: 5)
Reflexivity is connected to change through the perceived need and capacity of social actors in modern societies to deliberate upon and question their social circumstances, which in turn generates social transformation	Millar and Price, 2018
Reflexivity comprises coherence, vitality, and depth	May and Perry, 2017
Reflectivity is a practice that integrates the wholeness of intellectual, spiritual, emotive, and bodily knowing	Nobe-Ghelani (2018)
Critical reflexivity covers two aspects: (1) self-reflection, critical awareness of the assumptions, values and normative commitments underlying knowledge production; and social, institutional, and political context in which knowledge production takes place; (2) social transformation – mobilising social experimentation and learning.	Popa and Guillermin (2017)
Reflexivity is about questioning what we take for granted and examining the privileging and marginalizing effects of organizational policies, practices and hierarchies.	Allen, Cunliffe, Easterby-Smith, 2019
A process of recognizing one's own position in the world in order both to better understand the	Ng, Wright, Kuper,

Reflexivity definition	Source
limitations of one's own knowing and to better appreciate the social realities of others	Ayelet, (2019)
Critical reflexivity is an epistemological position that brings together the social constructionist stance of reflexivity with the emancipatory goals of critical social science.	Pitsoe and Letseka (2015)

Reflexivity as pointed out by Hopkins (1986: 636) is a creative and a meaning seeking process that connects past, present, and future in a way that *“mediates meaningful action”*. Finlay defines reflexivity as a way of thinking about ourselves, showing ourselves to ourselves, while reflection requires a silent physical, bodily, and emotional space to be created for silent listening and writing of thoughts that are emerging from our consciousness around a particular topic. Reflections facilitate a process where self is continuously and dynamically created and reflected. Finlay views reflection as the key dimension of reflexivity. Finlay includes, intuition, critical thinking sense making; ambiguity in language in the definition of reflexivity. This way, Finlay (2014) offers a problematised form of reflexivity that goes beyond reflective thinking into what Bleakley (1999: 14) defines as holistic reflexivity – *“an inclusive ecological or caring act of reflection as well as an appreciation gesture, with an explicit concern for ‘otherness’ and ‘difference’”*. Bleakley’s (1999) stance on reflexivity is similar to that of Nobe-Ghelani (2018) who defines reflexivity as a practice that integrates the wholeness of intellectual, spiritual, emotional and physical self. Babcock (1980: 5), on the other hand views *‘self’* as a social construct which *“arises in social experience”*. Babcock makes a point that personal development is predicated on reflexivity. This view is echoed in Freire’s (1972) work that links political agendas and social relations, with capability to transform through reflective practices. Paul Frere recommends a way of being that instils the value of freedom that recognises history, gender, race, class, and power in ways that engender social transformation.

In summary, the underlying features of reflexivity include critical thinking; creativity; transformation; meaning seeking process connecting past present and future; reflection; continuous and dynamic creation of self; intuition; sense making; analytical capacity; inclusivity; relationship with self; novelty; questioning epistemic styles and ontological positions; freedom that engenders social transformation; sense of wholeness of intellectual, spiritual, emotional and physical self.

5. Extreme Context Leadership Cases: Snippets of Historical Data

In this section the paper presents four leadership warrior cases to illustrate magnitudes and extents of reflexivity in warriorship during the trans-Atlantic slave trade (Queen Nzinga); in an era characterised by imposition of colonialism (Shaka Zulu and Emperor Menelik 11); at the onset of the decolonial era (Kwame Nkrumah). While this is not an exhaustive list of leaders who led in extreme contexts in Africa, the cases are adequate in depicting uniquely nuanced extreme contexts brought about by different geopolitical forces of the time.

5.1 Queen Nzinga (1583-1663)

Descending from a genealogy traced to a line of kings, Queen Nzinga earned her title of a warrior Queen when she personally led troops into battle and evaded every attempt to capture or kill her (Miller, 1973). The warrior queen fought against the Portuguese and their expanding slave trade in the 17th century. Queen Nzinga’s successful reign was largely attributed to her skilful management of diplomatic relationships with her allies (Miller, 1973). For instance, history has it that Portugal had broken its side of the deal and Nzinga would not give in to the Portuguese without a fight. As such, she formed a temporary alliance with the Dutch—an enemy of the Portuguese—and led an army against them (Miller, 2017).

Nzinga’s virtuosity on the battlefield suggest a special kind of training and exposure to military tactics and strategy. In her book that portrays courage and fluid intelligence of the warrior Queen, Henwood (2017) confirms that Nzinga’s father structured a special training for the future monarch and exposed her to the battlefield at a young age.

5.2 Shaka Zulu (1787-1828)

Keeping with the theme of leaders leading in extreme contexts with an aptitude for swift military action, we have one of Africa’s greatest known warriors, Shaka Zulu. Here is a gifted warrior, who revolutionized Zulu warfare with intelligent battle formation and red herring tactics (Mbatha, 2001). Shaka fought his way into power. He created the Zulu empire by bringing together Zulu-speaking clans and even incorporating rival clans.

Shaka Zulu had no tolerance for mediocrity (Mbatha, 2001). This was illustrated in his critical evaluation after every battle, procuring every fault and how it will be corrected in future (Tesfu, 2008). Additionally, before each battle he would expect every warrior while they stamp their feet and if he sensed any hesitancy, he would have them killed (Tesfu, 2008). Shaka's leadership grew more extreme and his tactics toward his people became more tyrannical (Tesfu, 2008). Shaka's childhood was difficult, and this reflects in his personality. His personal characteristics are likely to have been shaped by the fact that he was shunned, tormented, and neglected by his village for having a mother who bore a child with a rival clan member (Tesfu, 2008). For example, his most merciless time was at the death of his mother where he assassinated hundreds of Zulus; and ordered crops not to be planted and milk not to be drunk for a year (Mbatha, 2001). The following year, 1828 he was assassinated by his family members.

5.3 Emperor Menelik II (1844- 1913)

The political life of Emperor Menelik II illustrates how imperialism seeped into Ethiopia and created disunity and even obliteration of tribes. After overthrowing the Tewodros II, Sahle Menelik assumed power and led a successful empire. He had an aptitude for trade, diplomacy and battle strategy.

According to Marcus (1975) Menelik II was the creator of Ethiopian nationalism and the present multicultural empire. As an astute politician with "a highly developed sense of the realities of power, and as an open minded innovator" he set the values which Haile Selassie adopted as his own to bring Ethiopia into international community (Marcus, 1975). Marcus' (1975) work traces Menelik's training as a strategist, problem solver and expertise in conflict resolution from his experience in "intricate" family feuds, regional and local conflicts. Menelik's greatest success is his victory of the Italians at Adwa (1896), and his success in building economic infrastructure and institutions in Ethiopia.

5.4 Kwame Nkrumah (1909-1972)

Next, we have a leader whose afro-centric views were unmissable. Kwame Nkrumah was the first African Prime Minister of Ghana after independence. Nkrumah sought to see the end to the narrative that western democracy and parliamentary systems were the only valid way of governing. His attempts at creating a society that was free of materialism and western influence were fraught with difficulty as he sought to transform Ghana to a socialist state. Ghana was the first country to gain independence, a feat that must have been inconceivable to many at the time. Yet, it was the foremost goal above all things for Kwame Nkrumah. Biney (2008: 131) confirms this in this statement: "*Nkrumah can be said to have provided a vision for achieving Continental Union Government for Africa...*". In his own writings Nkrumah (1963) advocated for Pan-African unity to the solution of Africa's social, economic and political problems:

"We need the strength of our combined numbers and resources to protect ourselves from the very positive dangers of returning colonialism in disguised forms. We need it to combat the entrenched forces dividing our continent and still holding back millions of our brothers. We need it to secure total African liberation..." (Nkrumah 1963: 217).

6. Discussion and Conclusion

In shedding light into the "inner theatre" characteristics and warrior mystique traits that lead to social transformation in extreme context, the paper provided an epistemological road map, in the form of a theoretical bridge that integrates reflexivity and warrior mystique leadership traits. The theoretical bridge was galvanised around two questions: What are the personality traits of warriors that leader in extreme contexts? What are the shadow traits of these figures in relation to their leadership styles? With these questions in mind, the paper explored four cases of leaders that led in extreme context in Africa. The paper presented Nzinga's warrior mystique leadership qualities. Nzinga's virtuosity on the battlefield suggest a special kind of reflexivity captured by Paul Freire "*as a way of being that instils the value of freedom that recognises history, gender, race, class, and power in ways that engender social transformation*". Nkrumah on the other hand, demonstrated a critical way of being explained by Allen *et al.* 2019 and Freire that requires questioning epistemological and ontological basis of thoughts and actions taken for granted. Nkrumah shaped and transformed social and economic policies of Ghana. Relying on his sharp intellect, Nkrumah was able to mobilise the ordinary people to effect political and social change – a key feature of critical reflexivity. Courage, discipline, advanced warfare skills, drive, determination and military intelligence are the mystique warrior characteristics that defined Queen Nzinga and Shaka Zulu. Organising skills, critical thinking skills, determination, and problem solving skills seem to be the dominant skills illustrated in Menelik II's leadership style. Nkrumah on the other hand, in his leadership and writings demonstrated a different kind of reflexivity in

his oratory and influential speech acts, in addition to his organising skills. The brave men and women warriors discussed in this paper, demonstrated bravery, advanced warfare skills, military intelligence, confidence, endurance, resilience, drive, determination, problem solving skills, organising skills, oratory and influential speech acts. The four leaders possessed the mystique in their psyche to influence thousands of men and women to join wars and battles to protect their territories. In the case of Shaka Zulu we see how his difficult childhood circumstances left a psychological footprint in his “inner theatre”. Shaka Zulu acted out childhood woundedness in many moments out of anger, revenge, and sadness, revealing more the shadow side of a warrior rather than the mystique and healing aspects of a warrior.

All four cases present evidence of the motive behind the drive to lead in extreme contexts: to achieve the African warriors’ passionate dream to rule their own territories. To date, all African countries have political freedom. However, here is a paradox: the guns in Africa have not yet been silenced. The civil wars, the battles, and conflicts are still raging in Africa long after the slave trade and colonial rule. Is it possible that the seeds of conflictive energy in the collective inner theatres is so potent that it cannot be shaken out of human consciousness? What will it take for the contemporary African leaders to free, arguably, the conflictive nature within the human psyche? Could it be that the boundary lines erected to divide African countries, have cast a spell so potent to a point where 50 years after Nkrumah advocated for Africa to unite, peace and unity is still illusive. Could it be that the shadow energy of Africa’s collective consciousness, keeps the spell of conflict concealed and entrenched in the collective psyche in humanity? The answers to these questions require critical reflexivity to dominate the inner theatres of leaders in Africa and in her people. When leaders, are able to continuously, dynamically, and constructively create and recreate self through reflexivity practices, leaders would command the power to quash the shadow side of the warrior archetype to more evolved and alchemical side of the archetype when leading in the current extreme contexts. This will require the entire education system to be calibrated to embed critical reflexivity from early childhood development right up to post schooling education and beyond. This will also require civic virtues and the economic system to be built to incentivise critical reflexivity geared towards inclusivity, poverty eradication and high living standards for all.

This leads to a view that concludes the arguments presented in this paper – that leadership like the sun rolling in the sky, is oblivious of the position it is in the planetary system, it just does its thing: to shine blazingly with all its force and energy, for all around to it to be nurtured and transformed. Just like the sunrise, the radiant mystique power of leadership needs to be freed from the dark “inner theatres” to perform the leadership dance that transforms society. The paper puts forward a contention that effective leadership is demonstrable as a meta skill, a meta competence, a capability, a sensibility, a dynamic way of being that does not have deception, that is not defined by success or failure. Leadership is rather a continuous journey of reinventing self and society, that when harnessed and unlocked through the values of unity, society and communities can be transformed to evolved states of consciousness.

6.1 Limitations and Avenues for Further Research

The paper has not provided an exhaustive account of leaders that led in extreme context in Africa, which is an area that future research should improve on. Furthermore, the paper did not explore the shadow side of the leaders presented in this paper. This is a limitation and an avenue for further research to strengthen the warrior mystique leadership concept.

References

- Adamski, A. (2011) “Archetypes and the collective unconscious of Carl G. Jung in the light of quantum psychology”. *Neuro Quantology*, 9(3), 563-571.
- Alexander, H.A., (2018) “What is critical about critical pedagogy? Conflicting conceptions of criticism in the curriculum”. *Educational Philosophy and Theory*, 50(10), pp.903-916.
- Alejandro, A. (2021) “Reflexive discourse analysis: A methodology for the practice of reflexivity”. *European Journal of International Relations*, 27(1), 150-174.
- Allen, S., Cunliffe, A.L. and Easterby-Smith, M., (2019) “Understanding sustainability through the lens of ecocentric radical-reflexivity: Implications for management education”. *Journal of Business Ethics*, 154(3), pp.781-795.
- Arrien, A., (2013) *The four-fold way: Walking the paths of the warrior, teacher, healer, and visionary*. Harper Collins.
- Babcock, B. A. (1980) *Reflexivity: Definitions and discriminations*.
- Bleakley, A., (1999) “From reflective practice to holistic reflexivity”. *Studies in higher education*, 24(3), pp.315-330.
- Bolman, L. G., and Deal, T. E. (2011) *The wizard and the warrior: Leading with passion and power*. John Wiley & Sons.
- De Vries, M. F. K. (2010). *Reflections on character and leadership: on the couch with Manfred Kets de Vries*. John Wiley & Sons.

- Ezenwa, C.A. and Udensi, V.A., (2021) "Transatlantic slave trade and the roots of africa's arrested development." *Journal of African Studies and Sustainable Development*.
- Finlay, L. (2014) "Engaging phenomenological analysis." *Qualitative research in psychology*, 11(2), 121-141.
- Freire, P., (1972) "Education: domestication or liberation?". *Prospects*, 2(2), p. 174.
- Hannah, S.T., Uhl-Bien, M., Avolio, B.J. and Cavarretta, F.L., (2009) "A framework for examining leadership in extreme contexts". *The Leadership Quarterly*, 20(6), pp.897-919.
- Hopkins, H., (1986) "Temporality and reflexivity: Toward the creative engagement of consciousness". *Human Relations*, 39(7), pp.635-645.
- May, T., & Perry, B. (2017) *Reflexivity: The essential guide*. Sage.
- McGowan, P.J., (2003) "African military coups d'état, 1956–2001: frequency, trends and distribution". *The Journal of Modern African Studies*, 41(3), pp.339-370.
- Millar, J., & Price, M. (2018) "Imagining management education: A critique of the contribution of the United Nations PRME to critical reflexivity and rethinking management education". *Management Learning*, 49(3), 346-362.
- Myss, C. (2001) *Energy Anatomy* [CD]. *Louisville, CO: Sounds True*
- Ng, S. L., Wright, S. R., & Kuper, A. (2019) "The divergence and convergence of critical reflection and critical reflexivity: implications for health professions education". *Academic Medicine*, 94(8), 1122-1128
- Nobe-Ghelani, C. (2018) "Learning through a Reunion of Mind-Body-Emotion-Spirits: Experience of Mindfulness-Based Reflexivity in Critical Qualitative Research". *International Review of Qualitative Research*, 11(4), pp.413-431.
- Pitsoe, V. J., & Letseka, M. M. (2015) "Re-engineering teaching practice through reflexive practice and culturally relevant pedagogy framework." *e-BANGI*, 10, 154-169
- Popa, F., & Guillermin, M. (2017) "Reflexive methodological pluralism: The case of environmental valuation." *Journal of Mixed Methods Research*, 11(1), 19-35.
- Stein, M. (1998) *Jung's map of the soul: An introduction*. Open Court Publishing
- Tallman, B. (2003) "The organization leader as king, warrior, magician and lover: How Jungian archetypes affect the way men lead organizations." *Organization Development Journal*, 21(3), 19
- Trungpa, C. (2009) *Shambhala: The sacred path of the warrior*. Shambhala Publications.
- Whitaker, E. M., & Atkinson, P. A. (2019). Reflexivity.
- Wilber, K (2001) *No boundary*. Shambhala Publishers, (available at <https://pubmed.ncbi.nlm.nih.gov/14674573/>) [accessed on 20 June 2022].

Change Management in a South African Municipality: Can it Work?

Phatutshedzo Dapsey Mukheli and Vinessa Naidoo

Tshwane University of Technology, Pretoria, South Africa

PhatuM@tshwane.gov.za

naidoov@tut.ac.za

Abstract: The business environment is ever-changing, and even companies with dominant market share needs to keep up with these changes. Not all change initiatives prove to be successful. Numerous obstacles have been highlighted in literature such as a lack of communication and poor support from management. This study, therefore, set out to identify the different factors that affect the successful implementation of change management initiatives in the City of Tshwane Metropolitan Municipality. The study followed a quantitative method, and the primary data was collected by means of an online questionnaire through SurveyMonkey. The data was analysed via SPSS software and presented in graphs and tables for easy interpretation. The results and knowledge gained from this study will add to the existing body of knowledge in the discipline. It might also assist municipalities to effectively identify and quantify factors that affect their ability to manage constructive change at the workplace. All ethical requirements were considered during the study. The outcome of the study indicated that managers seem to be unaware of the benefits and principles of change management. Organisational structures and processes were found to be key contributors to the employees' resistance to change. The participants also displayed uncertainty whether communication, employee readiness for change initiative, leadership, and resources were fully addressed in the implementation of change management. The study therefore recommended that the city presents awareness sessions to all city employees including managers on the change management models, the principles of change management as well as the benefits of implementing such models and principles in the operations of the City of Tshwane. The study further recommended that the city provides the required resources for the implementation of change initiatives, and fully address the requirements for communication and employee readiness for change initiatives.

Keywords: Change initiatives, Change management, Leadership, Forces of change, Resistance to change, Readiness for change

1. Introduction

1.1 Background

Change is a constant issue that organisations are facing, brought about by internal or external forces. It occurs when the organisation realises the ineffectiveness of areas such as business processes, training and development of employees, recruitment and selection procedures, and method of appraisal. These aspects can be referred to as triggers of change (Robbins & Judge, 2019). Change is unavoidable, and organisations must be flexible to survive and remain relevant in their specific field (Franklin & Aguenza, 2016:25).

1.2 Motivation for the Study

It is worth noting that the failure rate of organisational change implementation ranges from 28% to 93%. The public sector is known to be more resistant to change. The awareness of this resistance motivated this study to determine the factors that affect the successful implementation of change management initiatives in the City of Tshwane Metropolitan Municipality.

1.3 Objectives of the Study

The overall objective of the study is to identify factors that affect the successful implementation of change management initiatives in the City of Tshwane Metropolitan Municipality. The specific objectives of the study are the following:

- To determine the level of awareness about the principles and potential benefits of change management among managers working in the City of Tshwane.
- To identify the factors that affect the successful implementation of change management initiatives in the City of Tshwane.

1.4 Research Questions

To reach the objectives of the study, the following research questions must be answered:

- What is the level of awareness among managers within the City of Tshwane regarding the potential benefits and principles of change management?
- What are the factors affecting the successful implementation of change management initiatives within the City of Tshwane?

2. Literature Review

Organisations worldwide are forced to embrace change due to acquisitions, globalisation, mergers, new processes, new technology, and outsourcing. It is not an easy phenomenon to handle but cannot be avoided. It is critical for leaders to manage these changes for the success of the organisation (Malek & Yazdanifard, 2012:52; Khaw et al. 2022).

2.1 Forces of Change

The forces triggering change within an organisation are external as well as internal factors. External factors cannot be controlled by the organisation. Internal factors, on the other hand, take place within the organisation. It is often due to development and innovation in the manufacturing process and added value to the product. Rzesescu and Tileaga (2016) proposed that it should bring specific results and should have the following characteristics:

- Relative advantages
- Impact on social relations
- Divisibility
- Reversibility
- Complexity
- Compatibility
- Communicability
- Time

Various types of change have been identified based on the source of the change as presented in Table 1.

Table 1: Types of organisational change

Category	Type	Description of change
Depth or extent	Strategic	Modification to the structure of the organisation e.g., the vision and mission
	Non-strategic	Also refers to as operational changes Aims to improve the performance of the organisation
Origin	Planned	Intentional actions Ensure that the organisation adjusts to its needs
	Emergent	Unintentional changes Cannot be predicted Organisation did not prepare for these changes
Timing	Developmental	People and process orientated Improves the processes and skills
	Transitional	Incremental in nature
	Transformational	Radical in nature
Intensity	Incremental	Mostly routine and continuous Small in nature Adjusts business model to adapt to operational environment
	Radical	Investigates the thorough review of all organisational aspects
Level of analysis	Macro-evolutionary	Changes the relationships of the organisation with its environment
	Micro-evolutionary	Internal to the organisation such as culture or size
	Revolutionary	Influences the distribution of power, including the power relationships Changes the control of resources

Source: Aravopoulou, 2015

2.2 Change Management

The successful implementation of change depends on the activities followed by management to implement the change in an organisation. According to the WHO and PAHO (2019:4-7), effective change management should display specific core elements as presented in Table 2.

Table 2: Core elements of change management

Element	Purpose
Governance and leadership	Communicates the need for change. Reduces confusion and resistance. Supports change.
Stakeholder engagement	Ensures stakeholders are engaged with change. Requires a stakeholder management plan.
Communication	Should be done on time. Should be provided continuously. Requires a communication plan indicating type, frequency, and recipients of communication.
Training and education	Builds new skills required by change. Enables employees to implement change. Enhances understanding of the need for change.
Workflow analysis and redesign	Enhances understanding of current performance procedures.
Monitoring and evaluation	Determines level of implementation.

Source: WHO and PAHO, 2019:4

Employees will be more motivated to accept change if they are ready for it. This can be achieved by causing employees to become uncomfortable with the current status. The resistance to change will also be recognised during the process of preparing the organisation for change. This resistance can be minimised by creating a new vision for the future of the organisation that is desirable, feasible, imaginable and flexible (Ryerson University, 2011:5).

Change is all about moving from the old to the new. The transition can be achieved through establishing change management structures, planning, and committing to activities that need to be carried out. Once the implementation of change is underway, it is important for the organisation to maintain the momentum by providing adequate resources and building a support system for the change agents (Fusch et al. 2020).

2.3 Steps of Workplace Change Management Process

Naslund and Norman (2022) reviewed the different models for change readiness and proposed the following six steps. These steps are all interrelated and should not be implemented in isolation.

- Establish clear vision and goals for the change effort,
- based on a thorough problem analysis,
- leading to an accepted need for the change,
- including top management commitment and support,
- as well as change recipients' (future users') support and
- for best use of organizational resources.

2.4 Change Management Models

To guide the implementation of change management initiatives, it is important for the organisation to consider the previously developed change management models.

2.4.1 Lewin's change management model

Lewin stated that the change of forces stabilises a system's behaviour. The set of behaviours are based on two forces, namely those maintaining the status quo and those pushing for change. When these two forces are equal, a state known as quasi-stationary equilibrium is reached, and current behaviours are maintained. This state can be changed by increasing the one force while decreasing the other. Lewin's model of change management consists of three steps, namely unfreezing, moving, and refreezing (Hussain et al., 2018).

During the 'unfreezing' process the forces maintaining the status quo are reduced. The members of the organisation are motivated to accept the change by explaining the difference between the desired behaviour and the current behaviour. The organisation is then moved from the previous state to the new desired state.

Once moved, 'refreezing' is implemented. This the new state is maintained through supporting mechanisms such as organisational culture, rewards, and structures (Hussain et al., 2018).

2.4.2 Kotter's Eight Step Model

Kotter (1996) expanded on Lewin's three step model to bring a more detailed approach for implementing change. Each step aimed to address a common mistake that managers make while initiating change:

- Establish a sense of urgency by creating reasons why change is necessary.
- Form a guiding coalition with enough power to lead the change.
- Create a vision for change to direct the change and develop strategies for achieving change vision.
- Communicate the change vision throughout the organisation.
- Empower others to act on the vision by removing barriers to change and encouraging risk-taking and creative problem solving.
- Plan for, create, and reward short-term wins that will be able to move the organisation towards the new vision.
- Consolidate improvements, reassess changes, and make necessary adjustments in the new programmes.
- Reinforce the changes by demonstrating the relationship between new behaviours and organisational success.

2.4.3 The ADKAR model

ADKAR stands for awareness, desire, knowledge, ability, and reinforcement. This model was developed by Jeff Hiatt. Awareness is created by encouraging employees to believe that change is needed. This is done through establishing and communicating the vision for change. To stimulate desire, the change vision is implemented, and different mechanisms are put in place to enable employees to participate in the change.

2.5 Factors Affecting the Implementation of Change Management Initiatives

The failure rate of organisational change implementation differs for various fields. Generally, it ranges from 28% to 93%. Errida and Lofti (2021) highlighted the lack of a clear change vision, insufficient leadership skills, poor communication, low commitment of stakeholders, and the absence of monitoring system as significant barriers to successful change management. Sung and Kim (2020) on the other hand identified certain strategies that are used for implementing change initiatives successfully. These include:

- Clear strategies and visions.
- Communication among members.
- Education and training to help stakeholders implement new behaviours, concepts, skills, and techniques in a new management system.
- Employee engagement and personnel systems/practices.
- Leadership behaviour.
- Organisational structures.
- Participation and mutual cooperation of all members of the organisation.
- Reinforcement for continuity.
- Role playing.

2.5.1 Communication

Communication is a key component to both the development and implementation of change initiatives. Sharing information consistently is important especially when there are uncertainties about the changes and when the implementation will take a long time. Organisations might need to adapt the vision and culture to effectively implement some changes. It is essential for management to communicate the changed vision and related objectives.

Effective communication will assist to determine employees' responses to change, reduce potential fears, and encourage the establishment of social support systems among employees. It will also provide feedback channels during the process.

2.5.2 Employee readiness for change initiatives

The implementation of change initiatives will be more effective if employees are involved in both the planning and organisation of the process. It will assist them with embracing the process rather than to resist it. Since employees prefer to maintain the familiar way of doing things, they might resist the change. Zafar (2014:238) identified the following common reasons why employees resist change:

- Lack of communication is one of the major reasons why up to 20% of change initiatives fail.
- Lack of required knowledge, skills, and resources.
- Unawareness of change objectives lead to 17 % of change initiative failures.
- Unsupportive organisational structures, as well as the failure to define the hierarchy levels needed for the implementation of change.

Resistance to change can be limited through the development of change readiness through the following actions:

- Education and training.
- Facilitation and support.
- Implicit and explicit coercion.
- Negotiation and agreement.
- Open communications.
- Participation and involvement.

2.5.3 Organisational structures, systems, and processes

There are two types of organisational structures, namely simple/flat and matrix. A simple structure is characterised by high flexibility and an ease of flow of information. A matrix structure, on the other hand, is rigid with tight controls. This type of structure brings specialists together and provides easy access and sharing of resources (Gupta, 2017:375).

The positive and negative attitudes of employees towards change, based on the two structures, can be seen in Table 3:

Table 3: Combination of structure and employee attitude towards change

Attitude	Matrix	Flat
Negative	High resistance to change	Anxiety, frustration, and little resistance to change
Positive	Acceptance of change with a fear of challenge or motive of learning	Highly accepted because of equal/greater participation

Source: Own compilation

2.5.4 Leadership

Strong leadership commitment is needed for successful change. A transformational leadership style has been identified as effective in reducing resistance to change. It has the ability to instil pride and faith while inspiring and empowering groups (Mansaray, 2019:28). Management could avoid crisis during the implementation of change as follows:

- Accept that change is a process.
- Assess risks and motivate employees.
- Create and communicate a vision for change.
- Consolidate improvement and keep the change going.
- Enable employees to act on the change vision.
- Implement change step by step.
- Plan and establish short-term wins.
- Reinforce the new ways of doing things (Stanleigh, 2008:37).

Giauque (2015:91) concluded that it is crucial to ensure that adequate resources are provided for middle managers to be able to tackle organisational reforms and changes. Education and training are key factors in enabling organisation members to respond to a changing environment.

3. Research Design and Methods

The quantitative research design was the preferred design for this study. It allowed the researcher to determine the research objective aligned with the online data collection method. Lastly, it allowed the researcher to use the deductive approach to confirm the theory on the different factors that affect the successful implementation of change management initiatives using the collected data.

3.1 Population and Sample of the Study

The total number of employees in the City of Tshwane Metropolitan Municipality is 19 829 (City of Tshwane, 2019:195). The number of employees that were eligible to participate in the study were 377. These are the employees that have either planned and or implemented change initiatives in the City of Tshwane.

The sample of the study was calculated using online SurveyMonkey sample calculator (SurveyMonkey, 2020). At 95% confidence interval and at 5% margin of error, the sample of the study was found to be 191 employees, this sample was selected through a stratified random sampling method. The strata used was the designation of the employees which were group heads, divisional heads, directors, deputy directors, functional heads and change management champions. A response rate of 70.6% was achieved.

3.2 Data Collection

A SurveyMonkey link to the questionnaire was distributed via email together with the information leaflet and informed consent. This approach assisted to limit the potential biases.

3.3 Data Analysis

The analysis, dissemination, and interpretation of the survey data were conducted through the IBM Statistical Package for the Social Sciences (SPSS). Both descriptive and inferential statistics were computed. The descriptive statistics were determined first to reveal the distribution of the data within the different demographic variables identified. The inferential statistics were computed to determine the level of relationship amongst the factors as well as to determine if there is a difference in perception amongst the research participants based on their different demographical information.

3.3.1 ANOVA

The Analysis of Variance (ANOVA) was used to detect differences between the experimental groups. The independent variables in this study, also known as factors, were the perceptions of the participants on communication, employee readiness for change initiatives, leadership, awareness by management, and resources. The dependent variables were the demographical information of the participants.

NOVA was used to determine the variation in the perceptions on the five factors due to demographical variables. The critical value was set at 0.05 and the calculated p-value was used to conclude whether the null hypothesis should be rejected or accepted.

3.3.2 Pearson correlation coefficient

Correlation is used to estimate the strength of the relationship between two variables, as well as to study if there is an association between them. Correlation coefficient was used in the study to determine the strength of the relationships between factors that are crucial for the successful implementation of change management initiatives in the organisation.

3.4 Quality of the Research

According to Saunders *et al.* (2019), a valid questionnaire assists the researcher to achieve accurate data that measures the concepts that the researcher is interested in collecting. A reliable questionnaire on the other hand will assist with the consistency of collecting data.

participant bias was prevented by allowing the participants to complete the questionnaire on their own. In terms of the researcher bias, the researcher did not participate in the study and did not influence the answers of the participants of the study. To assess the appropriateness of the questions posed to the research participants as well as test the reliability of the survey instrument, Cronbach's alpha coefficient analysis was employed.

The validity of the study was ensured by adapting an existing questionnaire developed by Wambua (2017) for a similar study conducted in the public sector of Kenya.

3.5 Ethical Considerations

Adherence to ethical norms and standards is critical when conducting research since it supports the aims of the research.

The researcher obtained approval from the Faculty of Management Sciences Research Ethics Committee to conduct the study. Permission was also obtained to collect data from the City of Tshwane Metropolitan Municipality. The questionnaire was accompanied by an information leaflet and informed consent to ensure voluntarily participation.

The collected data was treated with anonymity and confidentiality. The researcher did not engage in any activities aimed at identifying participants' personal information, for example, name, surname, or IP address.

4. Data Analysis and Findings

The descriptive statistics provided an overview of the distribution of the participants based on gender, educational level, level of position or function in the City of Tshwane, years of working experience in the City as either responsible for planning and/or implementation of change initiatives, and lastly, type of work that participants do in the city with regard to change management. The results showed that more females participated in the study and most participants had a NQF level 7 qualification. Management was adequately represented in the study, with a 59% response rate and the participants were mostly involved in change initiatives for 6 to 10 years, with a response rate of 45%. Those involved in the planning and implementing of change initiatives were also outnumbering those not involved in these activities.

Most of the participants had 6 to 10 years work experience in the city. The results on the perceptions of the participants regarding the five factors were also presented. The overall average perception ranged from 2.74 to 3.14, with perception on employee readiness obtaining the highest average, followed by awareness by management. Communication and leadership obtained lower overall average scores, which were 2.94 and 2.74, respectively. This shows that the participants were not sure if all the factors were fully addressed during the implementation of change management initiatives in the City of Tshwane. The inferential statistical analysis was conducted via ANOVA and Pearson correlation coefficients.

The ANOVA results showed that there were no significant differences on the perceptions of participants on five factors based on the demographical profiles. The Pearson correlation coefficient indicated that there is a moderate to strong correlation amongst the five factors, namely awareness by management, communication, employee readiness, leadership, and resources. The p-value indicated that there is a correlation amongst the five factors.

To determine the awareness by management Section E of the questionnaire was directed to management only (divisional heads, directors, deputy directors and functional heads) As indicated in Table 4 the average number of responses from these managers was 78.

Table 4: Awareness by management

Question	N	Mean
Employees are aware of the change management policy of the city	80	2.76
Employees are aware of how change management principles can assist the city to achieve its goals and vision	80	2.89
Employees are aware of the city's vision and goals	79	3.27
Employees are aware of their roles and responsibilities	79	3.39
Employees are aware of their change management champion	80	3.11
Employees understand how the change initiative will assist the city to achieve its goals and vision	80	2.96
Communication about the change initiative/s is sent to everyone affected by change initiative/s	80	3.49
Perception on Awareness (overall average)	78	3.1264
Valid N	78	

The managers mostly agreed that communication about the change was sent to all who would be affected by the change, with a mean value of 3.49. This was followed by the opinion that employees were aware of their duties and responsibilities, with a mean value of 3.39 and the statement that the employees were aware of the city's vision and goals at 3.27. The overall average of the responses was 3.1264. This is an indication that there is uncertainty about the awareness of the benefits and principles of change management among the managers.

Table 5 shows the Pearson correlation values and p-values amongst the five dimensions. The Pearson correlation values ranged from 0.382 to 0.680, showing a moderate to strong relationship amongst the variables. Further hypothesis testing was done to determine if there is correlation amongst five factors. All the p-values ranged from 0.000 to 0.001, which is less than the critical value of 0.01, indicating a significant correlation amongst the five factors.

Table 5: Correlation results amongst the five factors

	Perception on employee readiness		Perception on leadership		Perception on awareness management		Perception on resources	
Perception on communication	PC	PV	PC	PV	PC	PV	PC	PV
	0.478	0.000	0.680	0.000	0.574	0.000	0.522	0.000
Perception on employee readiness	Perception on communication		Perception on leadership		Perception on awareness management		Perception on resources	
	PC	PV	PC	PV	PC	PV	PC	PV
	0.478	0.000	0.531	0.000	0.490	0.000	0.382	0.001
Perception on awareness by management	Perception on employee readiness		Perception on leadership		Perception on communication		Perception on resources	
	PC	PV	PC	PV	PC	PV	PC	PV
	0.490	0.000	0.566	0.000	0.574	0.000	0.570	0.000
Perception on resources	Perception on employee readiness		Perception on leadership		Perception on awareness management		Perception on communication	
	PC	PV	PC	PV	PC	PV	PC	PV
	0.382	0.001	0.619	0.000	0.570	0.000	0.522	0.000

*PC = Pearson correlation

*PV = P-value

*Correlation is significant at the 0.01 level (2 tailed).

5. Conclusion and Recommendations

The study aimed to understand factors that affect the successful implementation of change management initiatives in the City of Tshwane Metropolitan Municipality. The recommendations provided are meant to assist management on actions that they need to take to improve the successful implementation of different change management initiatives in the city.

5.1 Conclusion by Objectives

The first objective was to determine the level of awareness about the potential benefits and principles of change management among managers working in the City of Tshwane.

Seven statements were included in the questionnaire to specifically investigate the awareness about the potential benefits and principles of change management among managers. The mean scores for these variables were between 2.76 and 3.49. The overall mean score of 3.1264 confirm that the managers were not agreeing nor disagreeing that they were aware of the principles and benefits of change management.

For the second objective, which was to identify the factors that affect the successful implementation of change management initiatives in the City of Tshwane, the study found that the employees of the City of Tshwane agreed that both organisational structures and processes are responsible for the employees' resistance to the

implementation of change initiatives. For the other factors, namely communication, employee readiness for change initiatives, leadership, and resources, the results of the study found that the employees were not sure if the requirements under those factors were fully addressed during the implementation of change initiatives.

6. Recommendations

To improve on the level of awareness of the potential benefits and principles of change management amongst managers in the City of Tshwane, it is recommended that awareness sessions on the change management models, principles of change management as well as the benefits of implementing such models and principles in the operations of the City of Tshwane be offered to all employees of the City of Tshwane, including managers.

The following recommendations are aligned to research objective 2:

To fully meet communication requirements, the following recommendations are made:

- The vision and goals of change initiatives should be clearly communicated to all affected employees.
- Managers should ensure that communicated messages clearly articulate what changes will be brought by the change initiatives to be implemented.
- Managers should use effective mechanisms to communicate the vision and goals of change initiatives.
- More effort should be put in place to ensure that employees that are affected by change initiatives clearly understand both the vision and goals of the change initiatives.

To fully meet employee readiness for change initiatives requirements, the following recommendations are made:

- Managers should clearly communicate what changes will be brought in by the change initiatives. This will assist with obtaining the required support to implement the initiative from the affected employees.
- Managers should implement effective remedial actions to address resistance to change initiatives by employees.
- Managers should put effective processes in place that will allow employees to voice their perceptions about the change initiatives to be implemented and should address such perceptions effectively.
- Managers should understand the root causes from both the city's structures and processes that are responsible for employees' resistance to change initiatives.

To demonstrate commitment towards the change initiatives to be implemented, top management should do the following:

- Be at the forefront about communicating the vision and goals of the change initiatives.
- Consistently monitor the implementation of change initiatives and effectively remove obstacles and address challenges that might be encountered by the project team.
- Provide required guidance, resources, and support to the project team implementing the change initiatives.

To fully meet resource requirements, the following recommendations are made:

- Managers should appoint knowledgeable employees to implement change initiatives.
- Managers should avoid moving employees between projects.
- Managers should give project teams enough time to implement change initiatives.
- Managers should provide effective training required to enable employees to implement change initiatives.
- The City of Tshwane should appoint leaders to drive change throughout the organisation. These leaders should not be expected to perform roles outside of their normal responsibilities. They should be allowed to focus on and remain dedicated to the change process as suggested by Jones *et al.* (2004).

7. Contributions of the Study

The study contributes to the understanding of factors that affect the successful implementation of change initiatives in a local government sphere. It also adds to the body of knowledge on change management.

8. Limitations of the Study

The results of the study gave neutral results, and this might be due to the 5-point Likert scale that was used. Perhaps the 7-point Likert scale might have given better results. The format of the questionnaire also did not allow participants to indicate any other issue/s that might be affecting the successful implementation of change initiatives in the City of Tshwane.

9. Recommendations for Future Research

This study looked at the factors affecting the successful implementation of change management initiatives in the City of Tshwane Metropolitan Municipality. One cannot reach the conclusion if these factors are affecting the successful implementation of change initiatives in other metropolitan municipalities. It is, therefore, recommended that a similar study be conducted in other metropolitan municipalities to compare the results. The results should further be compared to the private sectors to determine if the factors that affect the successful implementation of change management initiatives are the same for both public and private sectors.

10. Conclusion

This study aimed to determine the level of awareness amongst managers of the City of Tshwane Metropolitan Municipality on the potential benefits and principles of change management, as well as to identify factors that affect the successful implementation of change management initiatives in the City of Tshwane Metropolitan Municipality. Managers were found to be unsure of whether they are aware of the potential benefits and principles of change management. The city's structure and processes were found to be responsible for employee resistance to the implementation of change initiatives. The study also found that the requirements for the other four factors, namely communication, employee readiness for change initiatives, leadership, and resources were not fully addressed in the city during the implementation of change initiatives. Although the study faced some limitations, the objectives have been met and recommendations to managers in the City of Tshwane as well as for future research have been presented.

Acknowledgements

Firstly, I like to thank my student Ms Phatutshedzo Dapsey Mukheli for allowing me to write this article, an MBA study which I had supervised her to graduation.

Secondly, I like to thank my employer, The Tshwane University of Technology, for approving and financing all my expenses so I could have this wonderful opportunity to present this paper at this prestigious ECMLG, 19th European Conference on Management Leadership and Governance, 23 - 24 November 2023, Bayes Business School, City, University of London, UK.

A special thank you to my editor, Ms Santie Moll, for assisting with the meticulous editing of this paper.

A special thank you to Ms Riana Knighton from the Tshwane University of Technology (Tshwane School for Business and Society) for assisting me with all the administrative and financial arrangements to ensure that this conference materialised.

Finally, a special thank you to the ECMLG Conference Team (especially Ms Val Northfield and her colleagues) who were so professional and friendly to ensure that my first visit to the UK (London) was the most pleasant experience ever!

References

- Aravopoulou, E. (2015) "Organisational Change: A Conceptual and Theoretical Review", *Nowoczesne Systemy Zarzadzania*, Vol 10, pp 19-32.
- City of Tshwane. (2019). Annual Report 2018/2019 [Online]. Available from: http://www.tshwane.gov.za/sites/departments/financial-services/financial-documents/annual%20reports/annexure%20A_%202018_19%20annual%20report%20V16_27march2020_%20administrators%20report.pdf [Accessed: 24/06/2020].
- Errida, A. and Lotfi, B. (2021) "The determinants of organizational change management success: Literature review and case study", *International Journal of Engineering Business Management*. 2021;13. doi:10.1177/18479790211016273
- Franklin, U.E. and Aguenza, B.B. (2016) "Obstacles, Resistance, and Impact of Change in Organisations: An Examination of the Saudi Telecommunication Company" (stc), *International Journal of Academic Research in Business and Social Sciences*, Vol 6, No. 4, pp 23-37.

- Fusch, G. E., Ness, L., Booker, J. M., & Fusch, P. I. (2020) "People and process: Successful change management initiatives", *Journal of Social Change*, Vol 12, pp 166–184. <https://doi.org/10.5590/JOSC.2020.12.1.13>
- Giauque, D. (2015) Attitudes Toward Organizational Change Among Public Middle Managers, Public Personnel Management, Vol 44, No. 1, pp 70-98.
- Gupta, M. (2017) "Organisational Structure Affected by Strategic Change", *International Journal of Advance Research and Innovative Ideas in Education*, Vol 1, No. 3, pp 372-376.
- Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., and Ali, M. (2018) "Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change", *Journal of Innovation Knowledge*, Vol 3, No. 3, pp 123–127. <https://doi.org/10.1016/j.jik.2016.07.002>
- haw, K.W., Alnoor, A., AL-Abrow, H., Tiberius, V., Ganesan, Y. and Atshan, N. A. (2022) "Reactions towards organizational change: a systematic literature review", *Current Psychology*, (2022). <https://doi.org/10.1007/s12144-022-03070-6>
- Kotter, J.P. (1996) *Leading Change*, Boston, Harvard Business School Press.
- Malek, R. and Yazdanifard, R. (2012) "Overview of Change Management and its Implementation", *Business Economics, Financial Sciences and Management*, Vol 143, pp 149-153.
- Mansaray, H.E. (2019) "Role of Leadership Style in Organisational Change Management: A Literature Review", *Journal of Human Resource Management*, Vol 7, No. 1, pp 18-31.
- Naslund, D. and Norrman, A. (2022) "A Conceptual Framework for Understanding the Purpose of Change Initiatives", *Journal of Change Management*, 22:3,292-320, DOI: 10.1080/14697017.2022.2040571
- Rizescu, A. and Tileaga, C. (2016) "Factors Influencing Continuous Organisational Change", *Journal of Defence Resources Management*, Vol 7, No. 2, pp 139-144.
- Robbins, P.S. and Judge, A.T. (2019) *Organizational Behaviour*. 18th ed. New York: Pearson Education Limited.
- Ryerson University. (2011) *Change Management Guideline* [Online]. Available from: <https://www.ryerson.ca/content/dam/hr/manager-resources/docs/change-management-leadership-guide.pdf> [Accessed: 12/06/2020].
- Saunders, M., Lewis, P. and Thornhill, A. (2019) *Research Methods for Business Students*, 8th ed. New York, Pearson.
- Stanleigh, M. (2008) "Effecting Successful Change Management Initiatives", *Industrial and Commercial Training*, Vol 40, No. 1, pp 34-37.
- Sung, W. and Kim, C. (2020) "A Study on the Effect of Change Management on Organisational Innovation: Focusing on the Mediating Effect of Members' Innovative Behavior", *Sustainability*, Vol 13, No. 2079, pp 1-26.
- Survey Monkey (2020) *Sample Size Calculations* [Online]. Available from: <http://www.raosoft.com/samplesize.html>
- Wambua, B.M. (2017) *Factors Affecting Change Management in State Corporations in Kenya*, MBA Dissertation, University of Nairobi.
- World Health Organization and Pan American Health Organization. (2019) "Change Management in Public Health", *Information Systems for Health Toolkit*, Vol 1, August 2019.
- Zafar, F. (2014) "Organizational Change and Dealing with Employees' Resistance", *International Journal of Management Excellence*, Vol 2, No 3, pp 237-246.

Increasing Task Administration Efficiency by Means of a Customizable ICT Solution

Marek Musil and František Smrčka

Department of Technical Studies, College of Polytechnics Jihlava, Czech Republic

marek.musil@vspj.cz

smrcka@vspj.cz

Abstract: In production companies, managers frequently deal with inefficiencies caused by employees learning about new tasks with a considerable delay. The paper focuses on solving the lack of real-time interaction in currently used task administration systems by means of an ICT solution. The main causes of the inefficiencies consist in insufficient real-time information on the sides of both workers and managers. Employees view updates in the information system randomly, thus increasing unnecessary periods of idle time, while their superiors are not fully informed about the status of tasks in progress and about current workload of individual workers. The presented ICT solution was developed for production companies and implemented for the purpose of administering production line failure records. The solution is based on informing employees about a new maintenance task online in real time, using a combination of the designed information system with a mobile phone. The presented system utilizes advanced information technologies – cloud messaging, mobile applications, and web applications. The employee will be equipped with a smartphone with a specially designed application. By a notification sent to the mobile phone, the employee will be immediately informed about the task assigned. As regards task administering, employees enter information about the phases of task execution and managers are informed about the status of executed tasks. Another key feature of the system is providing managers with managerial overviews and compiling reports in order to monitor a number of key indicators. The Unified Process (UP) methodology was used to design the information system. The system accelerates the process of receiving tasks by individual maintenance workers after a failure has been reported, an online overview of the status of work on failures, including a managerial overview of the work of individual workers and the total time spent on solving the task (e.g. a production line defect removal). The system is designed to be universally applicable in other workplaces.

Keywords: Management system, ICT, Employment, Managerial reports, Information system design, Task administration

1. Introduction

Work task recording is an integral part of a production company operation. New tasks may occur randomly and can be unexpected. It is crucial to inform workers about new tasks and have effective records on task solving status. The paper addresses this task management issue on the example of recording machine failures in manufacturing companies. As for task registration, the paper treats machine failure registration as a particular real-life problem and an integral part of the manufacturing process. The shutdown of a production line due to its failure has a fundamental negative impact on the economy of the company. The lack of real-time notification is a major problem, and the main cause of lags. Existing methods of registration, i.e. using of a simple table in Excel documents, simple (and) static information system, paper form of evidence, and mainly oral communication/transmission of information, are typically ineffective and inefficient as they do not allow interactive notification about the failure, and significant time lags, resulting from passing the information among workers, occur between failure repair stages. This then has a major impact on repairing the failure and limiting production. In addition, the superior maintenance worker (manager) does not have an overview of what individual maintenance workers are currently doing and with what efficiency.

The ICT solution and its implementation as described by the paper is original and not yet presented, aimed to improve existing ICT solutions. The presented solution notifies a machine failure entered into the system in real-time to a competent worker (maintenance, repairman) who accepts the task to fix the failure. The superior maintenance worker is moreover informed about failures that are not accepted and solved within a short time period after being entered. It thus guarantees that the failure will not be ignored and the production becomes efficient. The topic of production efficiency is discussed in Soewito et al. (2019).

Mobile technologies, namely mobile applications and such features of mobile operating systems as cloud messaging and real-time notifications, are currently receiving a great response (Notifications overview, 2023). As for the trends in the area of mobile technologies, numerous papers present mobile technologies as tools for creating interesting mobile applications. A growing number of solutions use mobile applications and cloud messaging. Some practical examples of how mobile technologies has seen a significant boom and penetrated daily activities in recent years can be found in (Musil, 2021), (Musil, Smrčka, & Novotný, 2016), (Musil, & Novotný, 2015). Real-time notification, i.e. a tool informing about new events in real time, has lately become frequently used. Real-time notification has attracted significant attention from the scientific community as

seen from its abundant practical applications. Firebase Cloud Messaging is an instance of real-time notification and cloud messaging. The use of real-time notification can be found in multiple studies, e.g. (Zhao et al., 2014), (Villarreal et al., 2009); (Bussadee et al., 2016); (Gore et al., 2017); (Heryandi, 2018); (Firdaus et al., 2019); (Jiříček et al., 2022). Moroney (2017) representatively summarizes the real-time notification of Firebase Cloud Messaging (FCM). Firebase Cloud Messaging and notifications are used in Heryandi (2018); Firdaus et al. (2019), namely for the purpose of sending real-time notifications in student academic activity monitoring by means of Firebase Cloud Messaging. Over time, real-time monitoring in industrial applications has received a considerable attention (Bian et al., 2021), (Bílek, & Musil, 2022), (Cai et al., 2020), (Dong et al., 2019), (Han et al., 2021), (Chen et al., 2020), (Choueiri et al., 2020), (Jonathan et al., 2019), (Kim et al., 2021), (Yu et al., 2021), (Zhang et al., 2020). However, the mentioned studies usually use a computational machine learning method. We present a similar solution, i.e. management system for integration of the disabled on the labour market in (Smrčka, Musil, & Chalupová, 2022). For the purpose of task entering, a mobile application is used, for example, in (Smrčka et al., 2022b).

2. Problem Description

There is no unified functional system of production line failure registration in manufacturing companies. To record maintenance tasks, a manager typically uses a table (created e.g. in MS Excel) or a simple information system. However, such a solution does not provide full information online. The occurrence of significant time lags is the key issue. The failure or task registration process has the following pitfalls. The production line worker notifies a failure to a manager or a maintenance worker or they enter it into an information system. The maintenance worker learns about the failure with a significant time lag. They randomly monitor the list of registered failures in the information system, which, besides, must be updated in the case of a web application. A web application solution does not make it possible to notify workers about new changes online. The manager does not have a quick overview of what each maintenance person is doing and does not know who to assign the task to. They must determine which maintenance workers are available and find a suitable worker to assign the task to. The maintenance worker is also faced with deficiencies in the process of failure solution registration. The maintenance worker performing the assigned repair cannot record individual repair steps quickly into a system. They can either enter the information about completing the task into an information system later (not quite in real time) or inform a manager personally. In cases that the production worker notifies directly the maintenance worker on a failure, the information does not reach the manager, who thus cannot record the task. The maintenance worker may fail to accept the repair task as they may be working on another task.

To sum up the limitations of the presently used methods: time lags arise in many places, thereby delaying the moment of solving the failure. This can affect the production and company economy.

3. Methodology

The UP (Unified Process) methodology is used to design an information system for the task administration system. It is based on the SEP industry standard – Software Engineering Process. The UP is an abbreviated designation of the USDP (Unified Software Development Process) industry standard. It is a generic process for the UML – Unified Modeling Language. The UP is divided into individual iterations, each of which goes through five basic work processes: setting requirements, analysis, design, implementation, testing, iteration in UP (Schmuller, 2001).

A class diagram describes the system's static structure and shows data structures and operations on objects and the relationships between the objects. A use case diagram shows the behaviour of the system as seen by the user. Below, we describe the proposed solution and present several related UML-diagrams. The purpose of the diagrams is to describe the functionality of the system.

3.1 Research Objective

We cooperate with a major company that deals with the issue of failure task administering in the industrial area. The company is dominant and has many years of experience. The company creates software application for automotive and made a request to implement/create an effective application using ICT. In addition to the cooperation, we address/contact an industrial factory to get detail specification of issues and lacks in production.

In cooperation with experts from the production sphere, we identified key problems and proposed solutions. This paper presents the design of a system solution based on the obtained requirements and its resulting

implementation. The system is based on ICT technologies such as Firebase Cloud Messaging (FCM), the mobile platform and its features, the mobile application, and the web application. The proposed solution removes the identified shortcomings; it is unique and not yet presented. Moreover, it enables generating management reports, planning regular maintenance (a task similar to repairing a failure), and it can also be used for attendance records.

3.2 Proposed Solution

The problem domain is described in Fig. 1. Notifying is implemented through a real-time notification sent to the mobile application. The production line worker enters a failure on the production line into the system via an application on a mobile phone or tablet. Maintenance workers in charge of the respective production line are informed about the failure via a mobile application (real-time notification). Maintenance personnel accept the task for resolution and enter this fact in the mobile application. If the failure is not accepted by one of the maintenance workers within a certain time limit, then the manager is informed. They then assign the task to one of the maintenance workers personally.

The process of solving the repair of the production line: When solving the task, the start time, the end time and the time of the individual phases of the repair work are recorded. Maintenance workers accept the repair, enter the progress of the repair and the completion of the repair in the mobile application. The manager assigns the task to the selected maintenance worker and has an overview of which task the workers are working on. They can see at what stage the solution of the task is. Another key feature is the provision of management reports for the purpose of monitoring key work indicators: the time during which the worker accepted the task; time spent on solving the task; time spent on solving the task by individual workers.

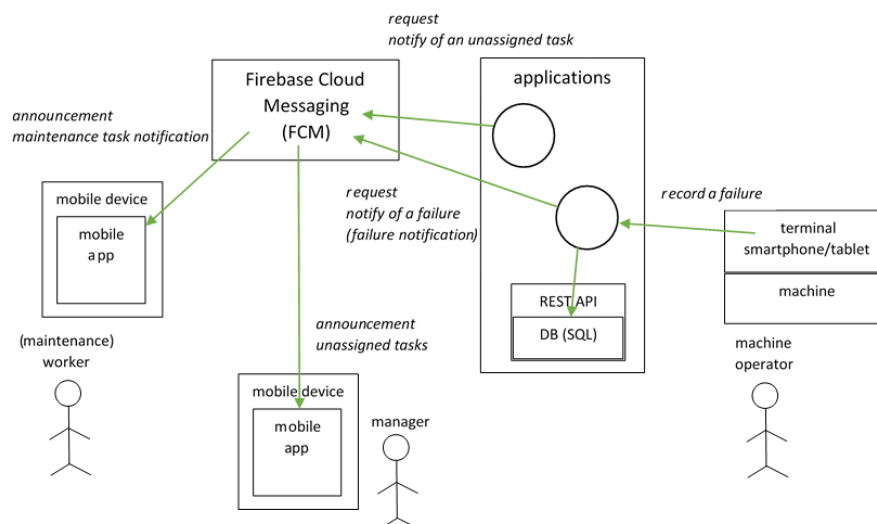


Figure 1: Problem case description: machine failure information system

By means of this solution, the time lags between the failure occurrence and the notification of the failure to the worker (maintenance technician) are minimized, and by using the application, the state of a pending task and searching for an available maintenance technician is minimized.

4. Design of the Task Management System

The following chapter describes a system designed for task administering. It presents UML diagrams that depict the proposed system and explains its functionalities.

As tasks are recorded and processed by the information system, competent workers can be informed of new tasks and managers of unassigned tasks (when the time limit for task assigning expires) in real time by means of a mobile application. Via the mobile application, the system enables a worker to book a task for execution and a manager to assign a task manually to a worker. Another key feature of the system is providing managers with managerial overviews and compiling reports in order to monitor a number of key indicators: the response time of booking the task, task completion time, task completion overviews for individual workers, and an overview of tasks assigned at individual workplaces, including the evaluation of task performance costs.

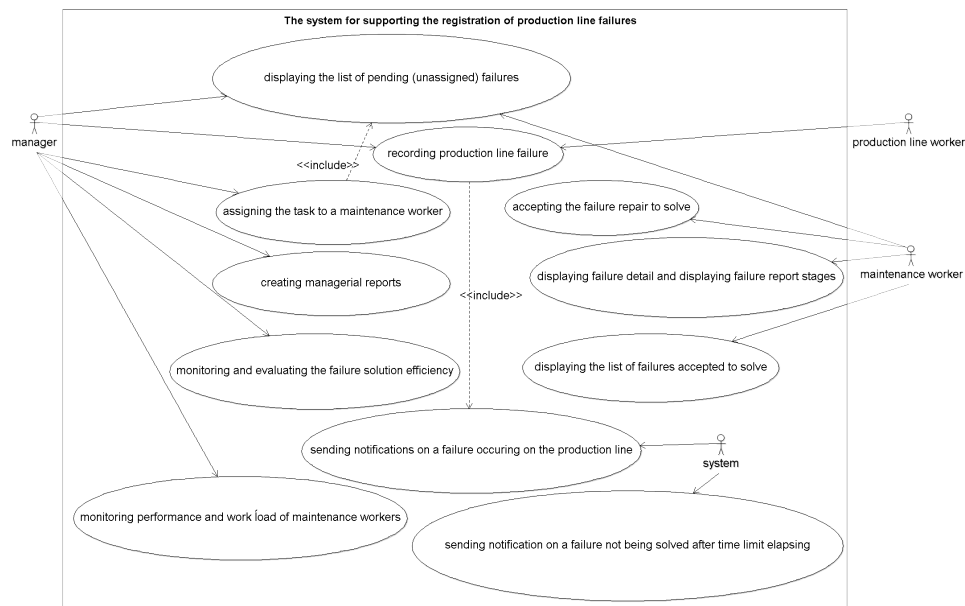


Figure 2: Use case diagram showing key operations

The system allows a worker to keep records of tasks and, within a task, to record the time (beginning and end) of partial steps of the task execution. The work interruption function and its recording then enable efficient determination of the net duration of the time spent on the task execution. Besides, a list of tasks under execution, a list of finished tasks, and a list of currently interrupted tasks (break) can be compiled. The system implementation provides fundamental information for managers such as time load, task lists, and statistics. Reporting provides information for setting task metrics.

To understand the logic of the solution, we now present the system functionalities. The system design makes it possible to decrease the time lag between partial task states. The time a worker spends solving the task does not affect our system. The worker is immediately informed about a task, they can start work on the task immediately and keep efficient record of the task execution. The considered system functionality and process procedures are shown in the following models. The sequence diagram (see Figure 2) shows the course of activities resulting from the described problem solution and captures the task handling procedure and the unassigned task execution procedure.

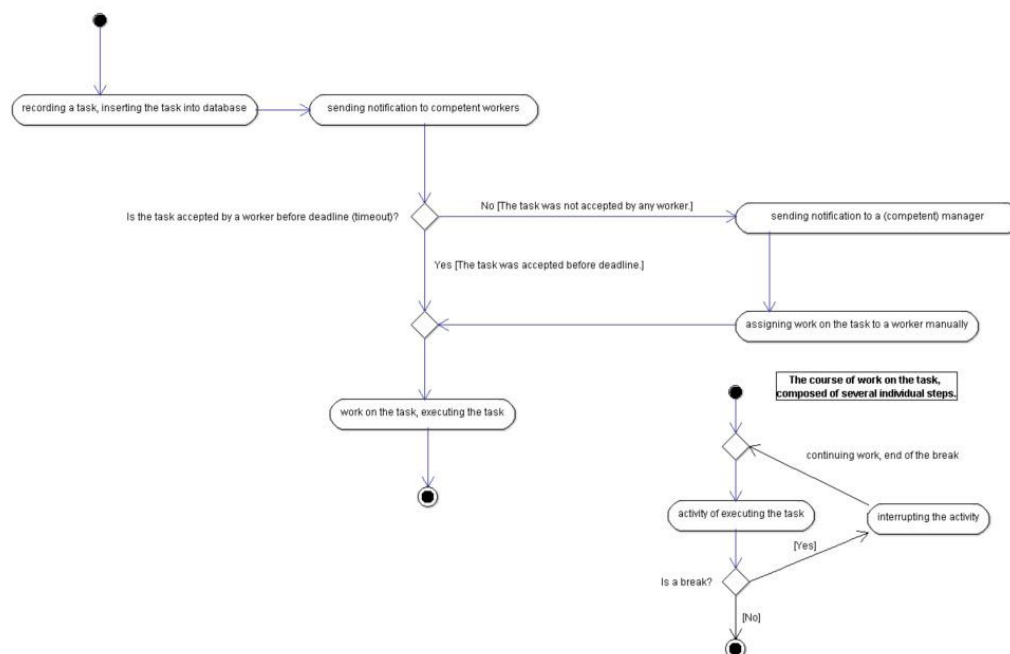


Figure 3: Process map. Diagram of activity shows the task processing procedure

5. Results and Discussion

The procedure of task handling consists of a sequence of partial steps (see Figure 3) and achieving time saving is shown in Figure 4, highlighted red. The work lag is minimized by quickly passing information about a new task and thanks to ongoing activity recording. The time of new task information providing (lag) is minimized by the mentioned procedure. The task is inserted to the system via a mobile device (worker's mobile application, a tablet placed at the workplace). Thanks to the immediate recording of the task in the system (through the mobile application) at the place of the requirement origin, the lag of $t_1 - t_0$ is minimized. Obtaining the notification (about a new task) and its displaying in the mobile application minimize the $t_2 - t_1$ time lag of informing a worker.

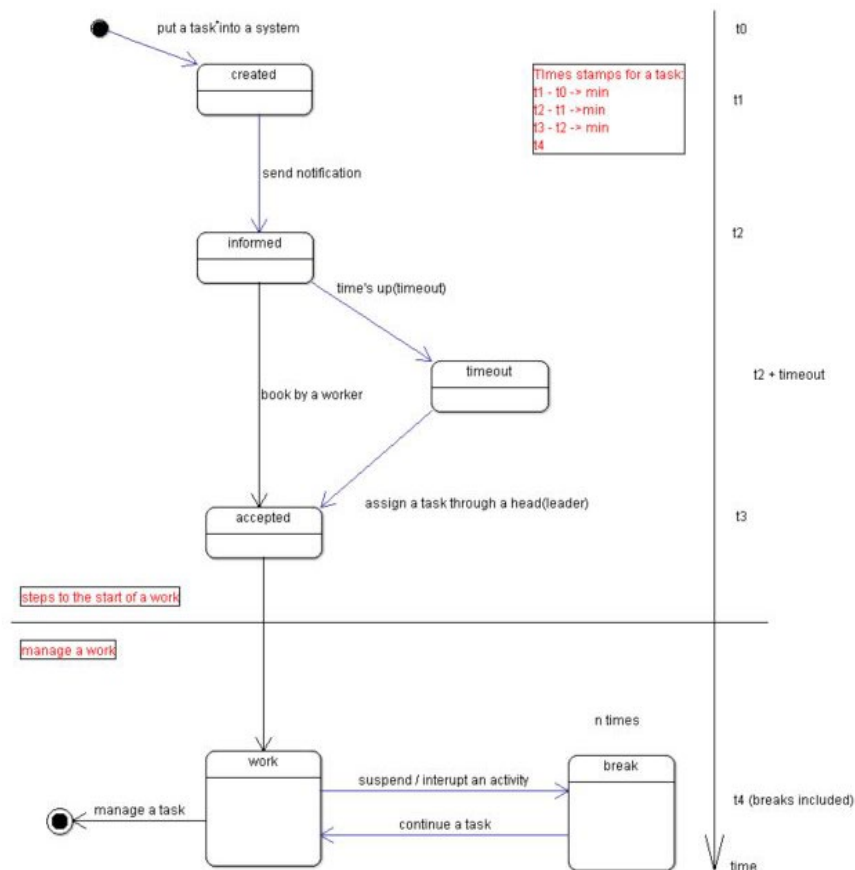


Figure 4: Task state diagram and time lag minimization

The solution includes a mobile and web application. The mobile application provides real-time notifications about the failure and allows the maintenance worker to enter the phases of the work on the task (repair initiation, repair activity interruption, repair continuation and repair completion). The manager is informed in real-time about pending repairs. The user interface of the mobile application with the possibility to enter the progress of the work on the repair of the fault is shown in Figure 5. The status of the work on the failure can be easily changed using the buttons.

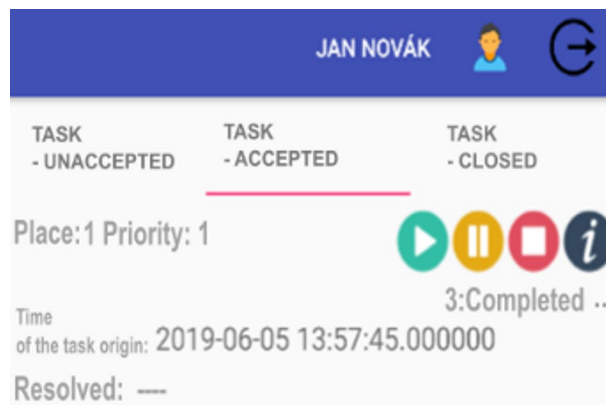


Figure 5: Mobile application – task management agenda

The web application is used by the supervisor. It enables the generation of management reports with overviews of the work performance of individual workers. The management reports can be seen in Fig. 6.

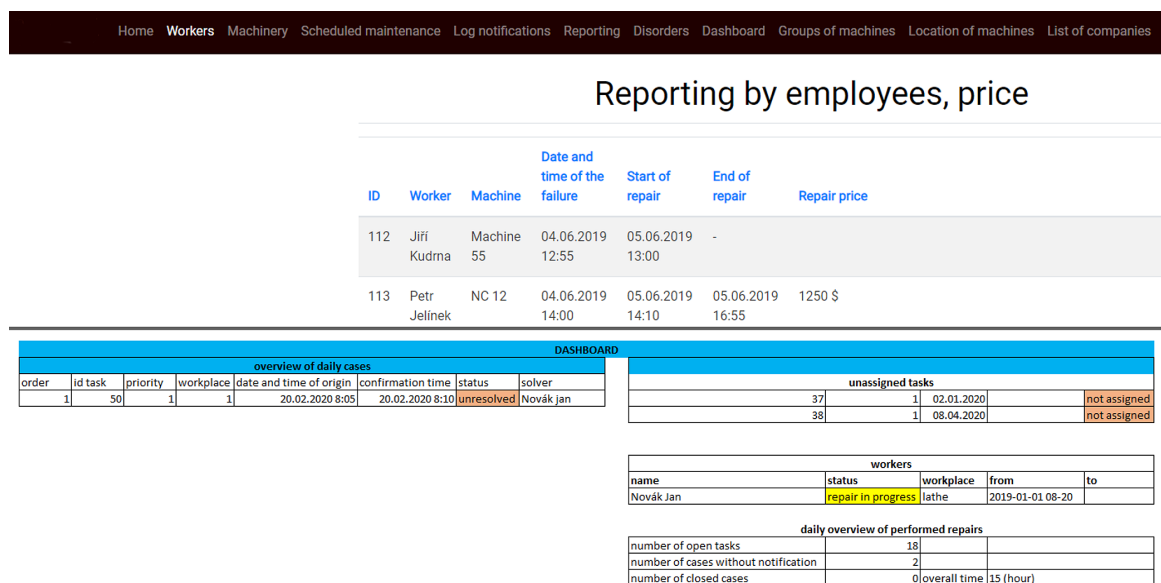


Figure 6: Web application – demonstration of management reports generation and demonstration of current failures and activities of maintenance workers

By using real-time notification, immediate informing about a new task is achieved and the time lag of notification on a failure to maintenance personnel is thereby significantly minimized. The system monitors unassigned tasks and informs the supervisor after the time interval has elapsed. This ensures that no unsolved tasks remain. The supervisor has an interactive overview of what individual workers are doing. The time delays between the individual phases of failure repair are minimized. The mentioned improvements significantly make the production process more efficient.

The presented system solves the shortcomings of the described problem and has several positives. The production line worker enters information about the failure into the system via mobile phone (instant, no time lag). Through the notification, the manager is immediately informed about the new repair task. They can find out what a worker is currently doing and what tasks they are working on. The manager can immediately assign a repair job directly to a maintenance worker.

Time saving is measured using (two) time spans recorded into database, the first time span is 'recoding the task into the system', and others are 'task booking with a worker' and 'start of work on the task'. Unfortunately, we don't have data from previous ineffective solutions and therefore, we can not compare saving times directly.

A simulation of the solved problem was created (in Simul8) and a comparison of the times of the previous solution and the new solution was made. Savings comparisons were made based on time estimates using simulation.

6. Conclusion

The presented ICT solution covers the issues described at the beginning of the study. The application implementation makes maintenance tasks more efficient, and, as a benefit, it enables recording of regular maintenance tasks. The maintenance worker is notified about a new failure immediately after it has been entered into the system (the time lag between entering and notification is minimized). The application identifies unassigned tasks and notifies the manager about them, so that no unexecuted task remains. The manager accesses records of the workload of individual workers. The worker records partial steps of the maintenance tasks. The time saving is the key factor of the solution, which improves production efficiency and company economy. Based on the simulation results, the improvement is in the order of tens of minutes. The presented solution can be implemented in other application areas, such as restaurant personnel service or creating disability-inclusive workplace, where handicapped workers use the mobile application to receive instructions.

References

- Bian, S., Li, Ch., Fu, Y., Ren, Y., Wu, T., Li, G., & Li, B. (2021). Machine learning-based real-time monitoring system for smart connected worker to improve energy efficiency. *Journal of Manufacturing Systems*, Volume 61, Pages 66-76, ISSN 0278-6125. <https://doi.org/10.1016/j.jmsy.2021.08.009>
- Bílek, M., & Musil, M. (2022). Přínosy IoT systému pro diagnostiku provozu zařízení. In *Mezinárodní vědecká konference KONKURENCE* (81-89). Jihlava: College of Polytechnics Jihlava / Vysoká škola polytechnická Jihlava.
- Bussadadee, S., Suwannatratia, S., Chonrawut, A., Thamwiwatthana, E., Pasupa, K. (2016) Inside Me: A proposal for healthcare mobile application. 2016 Fifth ICT International Student Project Conference (ICT-ISPC), Nakhon Pathom, 85-88, doi:10.1109/ICT-ISPC.2016.7519242.
- Cai, W., Wang, J., Jiang, P., Cao, L., Mi, G., & Zhou, Q. (2020). Application of sensing techniques and artificial intelligence-based methods to laser welding realtime monitoring: A critical review of recent literature. *Journal of Manufacturing Systems*, Volume 57, Pages 1-18, ISSN 0278-6125. <https://doi.org/10.1016/j.jmsy.2020.07.021>
- Dong, Q., Kontar, R., Li, M., Xu, G., & Xu, J. (2019). A simple approach to multivariate monitoring of production processes with non-Gaussian data. *Journal of Manufacturing Systems*, Volume 53, 2019, Pages 291-304, 17 ISSN 0278-6125. <https://doi.org/10.1016/j.jmsy.2019.07.005>
- Firdaus, D., Priambodo, B., & Jumaryadi, Y. (2019). Implementation of Push Notification for Business Incubator. *International Journal of Online and Biomedical Engineering (iJOE)*, 15. 42. 10.3991/ijoe.v15i14.11357.
- Gore, S., Sonawane, N., Pawar, S., & Nerkar, M. (2017). Survey Paper on An Android Based Mobile Framework for Student Alert Notification. *IJARCCCE* [online]. 6(3), 676-678 [cit. 2020-10-16]. ISSN 22781021. Available at: doi:10.17148/IJARCCCE.2017.63158
- Han, S., Mannan, N., Stein, D. C., Pattipati, K. R., & Bollas, G. M. (2021). Classification and regression models of audio and vibration signals for machine state monitoring in precision machining systems. *Journal of Manufacturing Systems*, Volume 61, 2021, Pages 45-53, ISSN 0278-6125. <https://doi.org/10.1016/j.jmsy.2021.08.004>
- Heryandi, A. (2018). Developing Application Programming Interface (API) for Student Academic Activity Monitoring using Firebase Cloud Messaging (FCM). *IOP Conference Series: Materials Science and Engineering*, 407.012149, 10.1088/1757-899X/407/1/012149.
- Chen, W., Liu, H., Qi, E. (2020). Discrete eventdriven model predictive control for real-time work-in-process optimization in serial production systems. *Journal of Manufacturing Systems*, Volume 55, Pages 132-142, 16 ISSN 0278-6125. <https://doi.org/10.1016/j.jmsy.2020.03.002>
- Choueiri, A. CH., Sato, D. M. V, Scalabrin, E. E., & Santos, E. A. P. (2020). An extended model for remaining time prediction in manufacturing systems using process mining. *Journal of Manufacturing Systems*, Volume 56, Pages 188-201, ISSN 0278-6125. <https://doi.org/10.1016/j.jmsy.2020.06.003>
- Jiříček, P., Musil, M., Smrčka, F., & Dvořáková, S. (2022). The it solution and economy of a social enterprise project. In *Proceedings of the 14th International Scientific Conference COMPETITION* (88-97). Jihlava: VŠPJ.
- Jonathan, O., Misra, S., Ibanga, E., Maskeliunas, R., Damasevicius, R. & R. Ahuja. (2019). "Design and implementation of a mobile webcast application with google analytics and cloud messaging functionality". *Journal of Physics: Conference Series*. doi: 10.1088/1742-6596/1235/1/012023.
- Kim, J., Lee, H., Jeong, S., & Ahn, S. (2021). Soundbased remote real-time multi-device operational monitoring system using a Convolutional Neural Network (CNN). *Journal of Manufacturing Systems*, Volume 58, Part A, Pages 431-441, ISSN 0278-6125. <https://doi.org/10.1016/j.jmsy.2020.12.020>
- Moroney, L. (2017). Firebase Cloud Messaging. in *The Definitive Guide to Firebase*. Apress, Berkeley, CA. https://doi.org/10.1007/978-1-4842-2943-9_9
- Musil, M. (2021). Indoor navigation mobile application in the college building. *Logos Polytechnicos*, 12(3), 116-125.
- Musil, M., Smrčka, F., & Novotný, J. (2016). Development of apps for sports wearables devices – SUUNTO, GARMIN, RECON. *Logos Polytechnicos*, 7(4), 57-70.
- Musil, M., & Novotný, J. (2015). Application development for Recon Jet. *LOGOS POLYTECHNIKOS*, 6(4), 109-116.
- Notifications overview : android developers. Android Developers. (2023, April 19). Retrieved April 20, 2023, from <https://developer.android.com/guide/topics/ui/notifiers/notifications>

- Schmuller, J. 2001. We think in UML. Prague: Grada, 2001. ISBN 80-247-0029-8.
- Smrčka, F., Musil, M., & Chalupová, M. (2022). Management System for Integration of the Disabled on the Labour Market. In *Proceeding of the 18-th Conference on Management Leadership and Governance* (382-988). Lisbon: ACPIL, 2022.
- Smrčka, F., Musil, M., Dostál, J., & Černá, M. (2022b). Aplikace Dobrometr jako nástroj konkurenční výhody organizace. In *Mezinárodní vědecká konference KONKURENCE - Sborník příspěvků z 13. ročníku Mezinárodní vědecké konference KONKURENCE* (290-300). Jihlava: College of Polytechnics Jihlava / Vysoká škola polytechnická Jihlava.
- Soewito, B., Gunawan, F., E., & Rusli, I., P. (2019). The use of android smart phones as a tool for absences. *Procedia Computer Science*. Volume 157, Pages 238-246, ISSN 1877-0509. <https://doi.org/10.1016/j.procs.2019.08.163>. Available at: <https://www.sciencedirect.com/science/article/pii/S1877050919310816>
- Villarreal, V., Laguna, J., L'opez, S., Fontecha, J., Fuentes, C., Herv'as, R., L'opez, D., & Bravo, J. (2009). A Proposal for Mobile Diabetes Self-control: Towards a Patient Monitoring Framework.
- Yu, J., Song, Y., Tang, D., & Dai, J. (2021). A Digital Twin approach based on nonparametric Bayesian network for complex system health monitoring, *Journal of Manufacturing Systems*, Volume 58, Part B, Pages 293-304, ISSN 0278-6125, <https://doi.org/10.1016/j.jmsy.2020.07.005>
- Zhang, Z., Li, B., Zhang, W., Lu, R., Wada, S., & Zhang, Y. (2020). Real-time penetration state monitoring using convolutional neural network for laser welding of tailor rolled blanks, *Journal of Manufacturing Systems*, Volume 54, Pages 348-360, ISSN 0278-6125, <https://doi.org/10.1016/j.jmsy.2020.01.006>
- Zhao, Y., Bond, I. A., & Sweatman, W. L. (2014). An Android application for receiving notifications of astrophysical transient events [online]. Volume 6, October 2014, Elsevier, 19-27, [cit. 2020-06-10]. Available at: <https://www.sciencedirect.com/science/article/pii/S221313371400016X>

Autonomous Systems Landscape in Hungary: Model and the First Results of a Survey

Gábor Nick^{1,2}, István Mezgár², Ádám Szaller^{1,2}, Eszter Bartis¹ and László Zahorán¹

¹EPIC InnoLabs Ltd. Budapest, Hungary

²Institute for Computer Science and Control, Budapest, Hungary

gabor.nick@epicinnolabs.hu

istvan.mezgar@sztaki.hu

adam.szaller@sztaki.hu

eszter.bartis@epicinnolabs.hu

laszlo.zahoran@epicinnolabs.hu

Abstract: The global economy increasingly responds to industrial digitization trends and develops its digitalization strategies, i.e., through application of Industry 4.0 concepts. Thereby, initiatives and developments are often carried out on a company-, industry- or country level. Hungary is one of the most industrialized countries in Europe since many leading car companies, together with their suppliers and related industries have production sites in this area. Witnessing the unprecedented scale and speed of industry transformation due to digitization in general and the emergence of autonomous solutions in all aspects of production and logistics in particular, it is well justified to deal with the question of what Autonomous Systems (ASys) will look like. How influential will it be when the changes' hard challenges and disruptive effects will be overcome, and what are the chances to meet the critical requirements of collaboration and cooperation? What are the technological and management tools to avoid being stuck in the so-called pilot purgatory? To analyse the ASys development status on a high level in the main part of this study, we introduce a conceptual model, including pillars and dimensions aiming to understand the Hungarian ecosystem in terms of ASys. The suggested framework follows a holistic approach in assessment by integrating the following pillars: ecosystem smart factory, human, product. In the second part a questionnaire's first results are presented: there is yet a lot to do to facilitate a definite turn in the mindset of the actors and to make them realize the relevance of simultaneous and continuous cultural and technological development. It's a newly developed, but already tested model to evaluate ASys ecosystems, which can be used in other countries, as well.

Keywords: Autonomous systems, Maturity model, Readiness assessment, Digitalization

1. Introduction

The term Industry 4.0 refers to the fourth industrial revolution, based on cyber-physical systems, i.e. the integration of real and virtual reality in a way that has never been done before, to achieve a new level of organisation and control of the entire value chain throughout the entire life cycle of products. This cycle follows increasingly individualised customer needs and extends from the conceptual design of the product, through its manufacture, to its delivery to the end user and finally to its recycling. ASys are an essential element of this.

ASys in manufacturing refer to the integration of advanced technologies and intelligent systems to enable self-governed and automated operations in the manufacturing industry. These systems utilize a combination of artificial intelligence (AI), machine learning (ML), robotics, and sensor technologies to perform tasks and make decisions without human intervention. According to Fottner et al (2021), Müller et al. (2021) and Ebert and Weyrich (2019), the key aspects of ASys in manufacturing are the following: Robotic Process Automation, Industrial Internet of Things, Machine Learning (ML) and Artificial Intelligence (AI), Autonomous Mobile Robots, Autonomous Quality Control Systems, and Autonomous Maintenance Systems. Based on the above-mentioned papers, the goal of ASys in manufacturing is to enhance productivity, improve product quality, increase operational efficiency, reduce costs, and provide a safer work environment. By automating repetitive tasks, optimizing processes, and leveraging data-driven insights, ASys enable manufacturers to achieve higher levels of performance and competitiveness in the global market.

Numerous maturity models can be found in the literature, most of which evaluate the overall readiness of a specific company for Industry 4.0. This study does not aim to extensively review existing models and readiness assessment methods, as others have already done so, such as Leyh, Schäffer, and Forstenhäusler (2016), Marheine, Gruber, and Back (2019), Leineweber et al. (2018), and Nick et al. (2019). Mittal et al. (2018) conducted a critical literature review on smart manufacturing and Industry 4.0 roadmaps, maturity models, frameworks, and readiness assessments currently available. They concluded that only a limited number of these models partially address the specific requirements and challenges faced by SMEs, as they primarily focus on solutions for large multinational enterprises.

In our research, as Synder (2019) emphasizes we conducted a literature review to understand the role of ASys methods, products, and services in relation to digital manufacturing and logistics. This review aimed to identify relevant application fields for inclusion in the maturity model's, as well as the application levels of ASys methods in research and industry. No papers or works directly assessing the ASys capabilities of manufacturing companies were found by the authors of this paper.

Regarding the evaluation method, some models rely on self-assessment, while others incorporate workshops or audits conducted by external experts. An alternative approach with minimal financial and labor-intensive efforts, time, and associated risks involves an online survey as input (with varying levels of result analysis for each model). For instance, the German Engineering Federation (VDMA) has developed two short self-assessment models specifically designed for small and medium-sized engineering companies (VDMA, 2015).

Following Teichert's (2019) six-step approach for developing a digital transformation maturity model, we utilized the same methodology for design this ASys model. The approach involved defining the scope, designing, populating, testing, deploying, and maintaining the model.

This paper also presents a model where the data collection was made by an online survey. The model focuses on industrial enterprises and their closely related service organisations. Research institutes, universities and professional associations are not included in the scope of the survey, as these organisations do not produce, manufacture specific products or provide logistics services, and many of the questions are therefore not meaningful in their case.

In this paper, adapted to the above points, a novel maturity model and a questionnaire is introduced, with the following aims 1) to assess the individual objective maturity level and capabilities of industrial firms 2) to assess the subjective needs and expectations of the actors of the domestic Industry 4.0 ecosystem.

2. The Definition System of the Model, the ASys and Industry 4.0

In this section the ASys aims (A1 - A4) have been summarized that are intended to serve as the foundation for the future fulfillment strategy, based on the model and the questionnaire we have developed. More precisely, the questionnaire is intended to assess the necessary steps contributing to their implementation, and here it should be deduced that we derived our model from the goals of Industry 4.0.

When evaluating the domestic situation of autonomous systems and aiming to create a model for that purpose, we essentially examine the direct or indirect fulfilment of the above statements and characteristics according to the established evaluation coordinate system.

In 2020, the Hungarian National Laboratory for Autonomous Systems has defined and set its own aims (see Table 1)

Table 1: Survey of the autonomous R+D sector related to ASys's goals

AIM	ANRL goals – full description	Decomposition of goals	The main question about the area of purpose	Connected Dimensions
A1	To solve R+D tasks demonstrating the functional and cooperative functioning of road and mobile robots mobility. To coordinate research, development and innovation activities.	Mobility-related R+D of road, aircraft and mobile robots demonstrating the functional and cooperative operation of systems, coordination activities.	Do you conduct mobility-related research? Which properties of the systems are being investigated?	Value chain Environmental criteria Organization and strategy Autonomous Systems dimension Knowledge transfer Sustainable product

AIM	ANRL goals – full description	Decomposition of goals	The main question about the area of purpose	Connected Dimensions
A2	Efficient and innovative solution of the above research tasks through the coordinated cooperation of the Hungarian professional and research community dealing with mobility.	Contact of research institute with industrial partner. Membership of professional organisations	Do you have connections to domestic mobile research institute? Are you a member of a professional organisation?	Organization and strategy Autonomous Systems dimension Knowledge transfer Sustainable product
A3	Compilation of relevant state tender materials and preparation of industrial projects.	Compilation of relevant state tender materials and preparation of industrial projects	Do you compile tender materials and prepare industrial projects?	Environmental criteria Organization and strategy Knowledge transfer
A4	Well-thought-out dissemination of knowledge necessary for the cultivation of research in the field through novel knowledge transfer mechanisms and traditional higher education channels.	Research knowledge in the special field, dissemination of this knowledge through all communication channels	What are the basic knowledge groups required for research in this field? Do you effectively disseminate your knowledge in this field?	Environmental criteria Organization and strategy Employment Dimension Knowledge transfer User Product and Service Demand

3. Model Description

The model is built on 4 pillars (Ecosystem, Smart Factory, Human, Product) which consist different dimensions. Table 2. visualizes the model structure. The realization of the following four objectives is expected as a result of the Industry 4.0 vision (Monostori et al. 2016; Bauernhansl et al. 2014):

- Horizontal integration: The smart factory constantly adapts to new circumstances in its environment (e.g., order backlog and availability of materials) and optimizes its production processes. This is achieved through integration with suppliers and customers within the value chain.
- Vertical integration: In the smart factory, people, machines, and other resources are represented in a digital model and communicate with each other through cyber-physical systems.
- Smart products: These products possess information about their own manufacturing processes and are capable of collecting and transmitting data about their manufacturing and usage phases throughout their lifecycle. This enables the digital modeling of the smart factory and the development of service offerings based on product data.
- The human being is the controller of value creation and is at the center.

By analyzing the above definitions of Industry 4.0 and aligning them with the stated objectives, we have developed our own model's framework and dimensions.

Table 2: Pillars and dimensions of the model

Industry 4.0 aim	Pillar	Topics	Dimensions
Horizontal integration	Ecosystem	Strategic characteristics of the company, overview of the local environment, methods to improve to reach the horizontal integration.	Value chain Environmental criteria

Industry 4.0 aim	Pillar	Topics	Dimensions
Vertical integration	Smart Factory	Physical realization of ASys, to achieve the <i>vertical integration</i> aim of Industry 4.0, application of cyber-physical systems, digital models.	Organization and strategy Autonomous Systems dimension
Human	Human	Highly skilled human resources are key to competitiveness, importance of education and training, targeted collaboration between industrial and academic sectors.	Employment Dimension Knowledge transfer
Smart product	Product	Smart products collect and transmit data about themselves during their usage phase. Services can be products as well.	Sustainable product User Product and Service Demand Dimension

3.1 Ecosystem Pillar

This pillar encompasses the strategic characteristics of the company, including management, statistical data and the overview of the local environment. The descriptions of local resources examine the company's immediate operating environment and the characteristics of the local market.

The model includes questions regarding the appearance of necessary services in the local market, focusing on their quantity, quality, and prices. The feasibility of environmental consciousness and sustainable development raises questions about the company's behavior regarding conscious energy and material utilization, as well as their applied manufacturing methods – which are necessary to improve to reach the *horizontal integration* aim of Industry 4.0.

3.1.1 Value chain dimension

The role of the company in the value chain and the knowledge it brings as added value provide insights into how a company can position itself in global markets. Conclusions can be drawn and based on the number of partner relationships, organizational structure, and operational philosophy.

The extent to which a company supports open innovation and how active innovation management is conducted are also relevant to this approach. The dimension includes questions about the **supplier network**, which encompasses all the actors in the supply chain who supply finished products, as well as those who provide the supply of raw materials, semi-finished products, commercial goods, and other manufacturing and logistics equipment.

External IT services also play an important role, and in the model, they refer to the IT and telecommunications services provided by external, independent companies that support or assist in day-to-day operations.

3.1.2 Environmental criteria dimension

This dimension refers to everything outside the factory gate that does not involve the government sector and includes all the partner relationships in which the company participates for economic reasons, including consumers of their products and services. Providing a national infrastructure that enables **horizontal integration** in the digital world is a fundamental prerequisite for realizing Industry 4.0 (see Table 2).

Implementation of ASys can only be successful in an environment that allows for **standardized communication** both within companies and between companies, and that actively and openly incorporates the results of technological innovations into everyday life, benefiting not only economic entities but also individuals, society, and communities. This requires an innovation-friendly legal and regulatory environment, in which the state must also play a role through the implementation of its financing and policy tools (see A3 in Table 1).

3.2 Smart Factory Pillar

The Smart Factory question group evaluates the physical realization ASys, to achieve the *vertical integration* aim of Industry 4.0. Logistics and manufacturing are now closely integrated, so it is advisable to examine the qualitative and quantitative characteristics of the available resources in both areas simultaneously, as well as

the company's relevant development plans. In a smart factory, continuous data collection and digital model building takes place for production-specific information, so it is interesting to assess in which areas and to what extent this occurs, and what IT regulations are made to ensure security.

3.2.1 *Organization and strategy dimension*

In this dimension, the primary question is whether the company can align its competitiveness with growth towards a higher level of maturity. It is essential to identify the key areas and measures where the greatest value generation occurs. To become a true digital enterprise, a clear vision and a documented, evaluated strategy are also necessary: the primary question is whether the company sees the connection between competitiveness and ASys. It is essential for leaders to have a clear understanding of the concept of ASys and to have a shared vision for the company. In terms of mindset, it is relevant to assess how much support is given to open innovation and whether active innovation management is conducted in the company's key areas for ASys development. (see A2 in Table 1).

3.2.2 *Autonomous systems dimension*

The evaluation of a company's capabilities should take into account the physical resources required for value creation, the processes taking place in the virtual world, and the characteristics/traits of humans (who connect all system elements, interpret data, and manage the system). It is also necessary to analyze existing equipment, future development directions, challenges, and opportunities related to the suitability for using/applying cyber-physical systems.

In terms of logistics systems, today's technologies already hold significant potential. E.g., Autonomous Mobile Robots (AMRs) replace the position of AGVs with advanced, flexible, and cost-effective technology. The **IT infrastructure** of companies is also a key element of ASys maturity. Appropriate network infrastructure is required for data collection, transmission, storage, and analysis. Application of cyber-physical systems (Monostori, 2015) can also improve the ASys readiness of a company.

3.3 **Human Pillar**

Highly skilled human resources are key to competitiveness, and attracting, retaining, training and continuously motivating them can be a major challenge, especially for SMEs who are striving to achieve the human-related goals of Industry 4.0. Due to the high costs of in-house or company-funded adult learning, it is mainly large companies that can afford to train their employees on an ongoing basis. Enterprises often face a shortage of skilled labour, which can be partly explained by training gaps and lower digital competences of the ones leaving the education system. (see A4 in Table 1).

3.3.1 *Employment dimension*

No matter how technocratic our vision of the future may be, it is essential to place the human at its center. In this dimension, we examine the internal training programs, the human resource processes existing within a company, and how they evaluate the competencies of their employees in relation to the future expectations arising from ASys. The success of implementing ASys significantly depends on knowledge, expertise, and capabilities. Digitalized workplaces demand a new work culture, where the significance of traditional working hours decreases, and result-oriented performance evaluation takes the forefront.

3.3.2 *Knowledge transfer dimension*

Cooperative groups operating in the economy highlight the intensive and targeted collaboration between the industrial and academic sectors, known as triple helix relationships (Leydesdorff and Etzkowitz, 1998). This involves identifying common research topics, initiating joint activities that combine theoretical and practical knowledge, and concentrating the entities of the economic, academic, and governmental spheres spatially to support faster innovation creation and diffusion (see A4 in Table 1).

3.4 **Product Pillar**

It is essential to know to what extent respondents are active in terms of innovation regarding both products and services, as well as processes and methods, as Smart Products are likely not yet widely produced in domestic factories. A characteristic of smart products is that they collect and transmit data about themselves during their usage phase. The question is whether the manufacturer utilizes this data, and if so, where and in what specific areas, i.e., to what extent the company is characterized by services based on product data.

The evaluation of smart products, services, and their closely related stakeholders such as customers, suppliers, and business partners are carried out in this fourth pillar.

3.4.1 Sustainable product dimension

Lifecycle management refers to the tracking of products throughout their lifecycle in the spirit of sustainability. During this procedure, the possibilities for product development that can respond to constantly changing user needs are collected, and their feedback is integrated into the design and manufacturing phases. At the current level of digitalization, it is possible to incorporate essential elements of reusability, refurbishment, and recyclability into product development and manufacturing, thereby reducing their ecological footprint, but also considering economic perspectives. Nowadays, interoperability with other manufacturers' products and systems is also a crucial factor to consider. (see A1 in Table 1).

3.4.2 User product and service demand dimension

In today's consumer society, the product and the user should be treated as a pair. The same product can be used differently by two different consumers. Exploring these differences and harnessing the potentials within them is a highly forward-thinking business strategy.

Digitization establishes the foundation for this new mindset, providing tools to uncover attitudes based on specific consumer feedback and data provided by the devices. Shifting towards selling services could be the future for many companies, where an increasingly smaller portion of revenue comes from the product itself, and a larger portion comes from related services that can be offered throughout the product's lifecycle.

Autonomous systems can raise services on higher level as they are more flexible, they can adapt themselves to personal demands and can handle unexpected situations well.

4. First Results

This article presents the results of a comprehensive national survey aimed at assessing the state and possibilities of digitalization in Hungarian companies. The survey questionnaire was completed by more than a hundred participating companies.

Regarding the size distribution of respondents, the survey included micro-sized companies (2%), small-sized companies (23%), medium-sized companies (45%), and large-sized companies (30%). Notably, the majority of respondents were from medium-sized companies. In terms of ownership structure, the survey revealed that Hungarian ownership was dominant, accounting for 40% of the companies surveyed. Additionally, 34% of the companies were exclusively owned by Hungarians, 19% had majority foreign ownership, and 7% were exclusively owned by foreigners. Notably, no responses were received from state-owned companies.

Regarding industry classification, the respondents were evenly distributed across various sectors (see Figure 1)

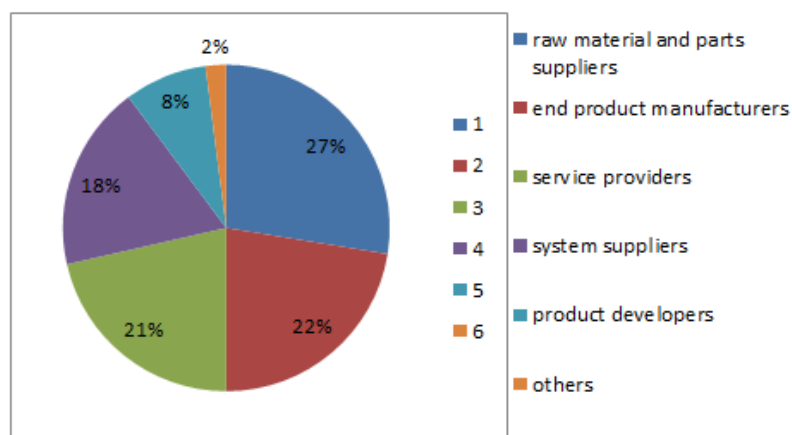


Figure 1: Dashboard visualizing the respondents in term of sectors

Ecosystem pillar, Value chain dimension: During the assessment of the value chains, the primary question was their number (below 10, between 10 and 50, over 50), how many domestic and foreign suppliers and exporters

the companies are in contact with. Domestic small and medium-sized companies mostly have between 10 and 50 domestic and foreign suppliers, among which there are generally more domestic suppliers, while on the supplier side they are more separated, with either low (less than 10) or high (over 50) customers. All large companies have over 50 supplier and customer relationships.

To the question assessing the technological need for autonomous systems, "In your industry, to what extent is the support of business and sales processes with autonomous systems typical or will it be typical in the given time frame?" In the short-term (2023) and medium-term (2024-2025), regardless of industry, more than 80% of the respondents gave the answer "to a large extent", at a higher level than completely, the answers from the vehicle manufacturing industry were overrepresented. At a lower level than this, 15% of the respondents answered, "to a certain extent", and no answer was received that "autonomous solutions are not typical in this area", and answers to "not justified" were also possibly received, without industry distinction.

Ecosystem pillar, Environmental criteria dimension: The environmental criteria mainly focused on questions related to the availability and financing of innovation, as well as the evaluation of areas related to sustainable development. Along the dimension, it turned out that more than 80% of the companies need external help to assess the operation of their processes, their products and services, improving efficiency, optimizing processes, uncovering possible errors, evaluating processes, steps that can be refined in order to explore. Each company identified at least two of the options as challenges related to this: lack of capital, availability of expertise, training, further training, existing outdated production technologies, processes and lack of local cooperation opportunities. Most of them used some form of EU grant (32%), domestic grant (12%), own funds (11%), development loan (10%) to finance the current and past corporate industrial digitization developments and research. Regarding how the state could contribute to the success of industrial digitalization in Hungary, the areas primarily indicated by large companies are the financing of target programs, State / MNB business development lending policy, infrastructure.

Smart Factory pillar, Organization, and strategy dimension: The organizational principles, discussed earlier in this chapter, serve as a significant differentiator, and provide insights into the characteristics that best distinguish the participating companies based on their size, industry, and location. In terms of digitalization strategy, companies were given the option to indicate its existence and current status. It is evident that large companies have a digitalization strategy in place and are actively implementing it. However, nearly half of the small and medium-sized companies do not have such a strategy. Among the remaining two-thirds, the majority are in the development phase, with a smaller portion already implementing their strategies. More than 83% of the respondents expressed the need for their company's processes to be digitally represented and interconnected. However, currently, only large companies have implemented a digital twin process representation, accounting for a mere 27% of the total. Even among these larger companies, the implementation is only partial at the company level.

Smart Factory pillar, Autonomous Systems dimension: The Autonomous Systems dimension played a significant role in the survey, examining both past investments and developments as well as future plans from various perspectives. In the previous year, 67% of the companies undertook developments and investments in support of autonomous solutions. The realized projects predominantly focused on production and manufacturing (42%) and logistics (31%), with additional emphasis on supporting non-primary activities such as quality assurance (21%), sales (11%), and partnerships (7%). When asked about the utilization of automated tools/equipment in production processes and logistics, all large companies responded affirmatively. Additionally, 37% of medium-sized companies reported using such tools, primarily in production processes. Regarding future plans for expanding the use of these devices, there was a clear continuation of expansion among current users, and 68% of non-users expressed their interest in adopting these technologies. Regarding the timing and completeness of robotic and autonomous solutions, it is evident that companies expect progress in the short term (2023) and medium term (2024-2025). However, achieving complete implementation is not a medium-term goal for current technology users.

These findings highlight the increasing adoption and investment in autonomous systems, with companies recognizing their potential for improving efficiency and performance across various areas of operation. While large companies lead the way in implementing these solutions, there is growing interest and willingness among smaller enterprises to embrace this technology in the near future.

Human pillar, Employment dimension: An important consideration in the survey was the impact of implementing autonomous devices, systems, and technologies on the conditions of human work. Two-thirds of the companies expressed similar views on this matter, with almost equal proportions of acceptance in responses

such as 'New jobs will be created' and 'Some jobs will disappear, but new roles will emerge', as well as 'Robots are meant to support workers' and 'Robots and machines will replace traditional manual labor'. Additionally, 96% of the companies agreed that new types of skills and qualifications are necessary to adapt to the changing working conditions.

The survey also shed light on the availability and perceived value of specific organizational units and expertise within the companies. Half of the respondents indicated having organizational units for 'Automation of production and logistics' and 'IT support of business processes', while 'Production and production optimization', 'Data analysis and evaluation', and 'Development and introduction of autonomous systems' were present in only one case each or not available at all. The presence of an internal team for the development and introduction of autonomous systems was reported by less than 3% of the companies, and the question on 'Manufacturing and production optimization' received relatively low responses (below 15%).

Human pillar, Knowledge transfer dimension: In terms of knowledge transfer, participants were asked about the areas in which they conduct internal training programs. The most common training topics included robotics, autonomous systems, Big Data management, and additive processes (e.g. 3D printing), while areas such as data protection and innovation management were less frequently covered. Most companies, regardless of size, had at least two training areas, with large companies covering almost all training topics. The labor market availability of specialists was also assessed. Companies were asked to rate the availability of specialists in various areas as satisfactory, partially satisfactory, or unsatisfactory.

Product pillar: The survey aimed to explore the customer needs that companies were preparing to address in the future. The results indicate that more than four-fifths of the respondents are equipped to adapt their production processes to accommodate "Higher complexity" and "Individual production." However, only 31% of the respondents intend to consider aspects such as the "Incorporation of smart, autonomous capabilities," "Environmental awareness," and a "Shorter product life cycle," with less than 15% representation for each of these factors.

The product life cycle holds valuable insights for future development and production. However, the data generated during the production or usage of products or services is primarily utilized by large companies. It is worth noting that a common attitude emerged among these companies, where the data is collected but not evaluated. Moreover, on a smaller scale, many companies do not even collect such data.

5. Conclusions

Due to the exponential advancement of technology, digitalization is indispensable for domestic companies. While we can say that Hungary's lag in this field is only a few years, the rapid development makes this lag much more significant in absolute terms than in previous decades. Among the national-level factors influencing readiness for ASys, we must mention the general guidelines resulting from digitalization policies, which affect the operational processes of businesses at a general level. Digitally accessible government services (e-government), strengthening online trust and security, and expanding fast and efficient electronic administrative procedures are essential for harmonious development.

Large companies demonstrated more extensive supplier and customer relationships, while smaller companies often had industrial partnerships. The majority of respondents expressed a strong need for autonomous systems in business processes. Challenges related to financing, expertise, and outdated technologies were identified in the environmental dimension. Companies recognized the importance of new skills and qualifications to adapt to changing working conditions, and knowledge transfer through internal training programs was prevalent, although specialists in certain areas were lacking in the labour market.

Acknowledgement

The research was supported by the European Union within the framework of the National Laboratory for Autonomous Systems. (RRF-2.3.1-21-2022-00002)

References

- Bauernhansl, T.; Hoppel, M. T.; Vogel-Heuser, B. (2014): *Industrie 4.0 in Produktion, Automatisierung und Logistik: Anwendung, Technologien, Migration*. Springer, Wiesbaden
- Ebert, C., & Weyrich, M. (2019). Validation of Autonomous Systems. *IEEE Software*, 36(5), 15-23.
- Fottner, J., Clauer, D., Hormes, F., Freitag, M., Beinke, T., Overmeyer, L., ... & Thomas, F. (2021). Autonomous Systems in intralogistics—state of the art and future research challenges. *Journal LOGISTICS RESEARCH*.

- Leydesdorff, L., & Etzkowitz, H. (1998). The triple helix as a model for innovation studies. *Science and public policy*, 25(3), 195-203.
- Leyh, C., Bley, K., Schäffer, T., & Forstenhäusler, S. (2016). SIMMI 4.0-a maturity model for classifying the enterprise-wide it and software landscape focusing on Industry 4.0. *Proceedings of the Federated Conference on Computer Science and Information Systems*, 1297-1302, IEEE
- Marheine, C., Gruber, L. and Back, A. (2019) „Innovation durch den Einsatz von Enterprise IoT-Lösungen: Ein Modell zur Bestimmung des Innovationspotenzials“, *HMD Praxis der Wirtschaftsinformatik*, Vol. 56, pp. 1126-1143.
- Mittal, S., Khan, M., Romero, D. and Wuest, T. (2018) “A Critical Review of Smart Manufacturing & Industry 4.0 Maturity Models: Implications for Small and Medium-sized Enterprises (SMEs)”, *Journal of Manufacturing Systems*, Vol. 49, pp. 194-214.
- Monostori L., Kádár, B., Bauernhansl T., Kondoh T., Kumara S., Reinhart G., Sauer O., Schuh G., Sihn W., Ueda K. (2016). Cyber-physical systems in manufacturing. *CIRP Annals - Manufacturing Technology*, vol. 65(2), pp. 621-641.
- Monostori, L. (2015). Cyber-physical production systems: roots from manufacturing science and technology. *at-Automatisierungstechnik*, 63(10), 766-776.
- Müller, M., Müller, T., Ashtari Talkhestani, B., Marks, P., Jazdi, N., & Weyrich, M. (2021). Industrial Autonomous Systems: a survey on definitions, characteristics and abilities. *at-Automatisierungstechnik*, 69(1), 3-13.
- Nick, G., Gallina, V., Szaller, Á., Várgedő, T. and Schumacher, A. (2019) “Industry 4.0 in Germany, Austria and Hungary: interpretation, strategies and readiness model”, *Proceedings of the 16th IMEKO TC10 Conference*, pp. 71-76.
- Snyder, H. (2019). ‘Literature Review as a Research Methodology: An Overview and Guidelines’. *Journal of Business Research* 104 (November): 333–39
- Teichert, R. (2019) ‘Digital Transformation Maturity: A Systematic Review of Literature’. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis* 67 (6): 1673–87.
- VDMA (2015): *Industrie 4.0 Readiness*. VDMA’s IMPULS-Stiftung, Aachen, Köln

Leadership Development Programs Today: A Guide to Effective Strategy Execution or *Fads du Jour*?

Hester Nienaber^{1,2} and Richard McNeill³

¹Department of Operations Management, University of South Africa (Unisa), Pretoria, South Africa

²School of Hotel and Restaurant Management, Northern Arizona University (NAU), Flagstaff, USA

³School of Hotel and Restaurant Management, The W.A. Franke College of Business, Northern Arizona University, Flagstaff, USA

hester.nienaber@nau.edu

Richard.McNeill@nau.edu

Abstract: Leaders are answerable. *Organizational performance* is attained by successful *strategy* execution. Consequently, organizations heavily spend on *leadership development* to hone leaders' *competence* aimed at ensuring the organization's *competitive success*. However, the success of such programs is questioned because of, amongst others, (a) frequently reported strategy implementation failure, allegedly owing to the absence of a *competitive advantage* and (b) observations that leadership as a mandatory source of competitive advantage has declined, despite *leadership development* initiatives. Thus, the *question* arises whether organizations systematically use leadership development foundational metrics (e.g., direction-setting capacity, trust, etc.) for effective strategy implementation. As part of a larger study, this report accounts for organizational use of leadership development metrics in strategy implementation. We followed the guidance of reputable scholars in conducting the empirical study. Limited information on the topic dictated an *exploratory approach* to gain insights to lay the foundation for future descriptive and explanatory studies. The considerable amount of data required to answer the question necessitated an exploratory survey. We collected data from a purposely selected population with an online questionnaire, based on a literature review and pre-tested with Human Resource professionals, complying with ethical principles. The *findings* include: The study met norms for exploratory surveys and trustworthiness criteria. More than half of the diverse respondents (concerning demographic variables, strategies applied, and ensuing organizational performance) reported the use of leadership development metrics in strategy implementation. However, few respondents linked the metrics used to competitive advantage. The *implications* include that the leadership development interventions may not have been optimal in ensuring effective strategy implementation based on competitive advantage. It can be *concluded* that the leadership metrics the respondents' organizations have used may have been ineffective in ensuring competitive success. The *value* of this paper stems from its actionable insights based on proven theory and validated by an exploratory survey. However, the main *limitation* of the study is its cross-sectional nature. Hence, we recommend further descriptive and explanatory research to enable broader generalizations.

Keywords: Leaders, Organizational performance, Strategy execution, Competitive advantage, Leadership development, Leader competence

1. Introduction

Leaders are answerable. Their main accountability is *organizational performance*, namely, realizing the organization's intent to deliver value (Aaker and Moorman, 2019; Ansoff, 1965; Holbeche, 2022; Rothwell, Hohne and King, 2018). *Organizational performance* is attained through successful *strategy* execution (Aaker and Moorman, 2019; Balogun, Best and Lê, 2015; Barney, 1991; Holbeche, 2022). Thus, strategic intent and execution must be aligned.

Effective leaders drive execution guided by *competitive advantage* (Aaker and Moorman, 2019; Ansoff, 1965; Barney, 1991; Porter, 1985). Competitive advantage signifies that the organization offers customer value either at a lower cost than or differentiated from the competition (Porter, 1985). Competitive advantage arises from leaders accomplishing *coordination* and *cooperation* that align key actions fulfilling strategic intent (Nienaber and McNeill, 2022; Skivington and Daft, 1991). In essence, coordination and cooperation facilitate value-creating activities which depend on (a) the competitive market that the organization elects to serve, (b) customer value - whether economic, functional, psychological, or a combination, and (c) access to resources to provide customer value (Nienaber and McNeill, 2022). All resources, regardless of their significance, are required in value creation. Therefore, leaders must optimally combine all resources to ensure performance (Barney, 1991; Teece, Peteraf and Lee, 2016). Human resources are the most significant due to their *competence* to provide customer value by transforming inputs into customer-valued offerings (Barney, 1991; Becker, 1962; CIPD, 2016; Hogan and Sherman, 2020; Holbeche, 2022; White, 1959). Effective leaders create an environment conducive to unleashing employee competence by encouraging risk-taking behaviors that can spur innovation. Innovation drives employee engagement as they are available to use their competence in value creation (Drucker, 1985; Hogan and Sherman, 2020; Teece, Peteraf and Lee, 2016).

Scholars interpret ‘*competence*’ differently (cf. George, 2021). However, most explanations conform to that of McClelland (1973) and are consistent with Hogan and Warrenfeltz(s)’ (2003) taxonomy which accounts for all competency frameworks or models. Competence, sometimes called *competency*, comprises knowledge, skills, experience, and behavior required to perform a job successfully (George, 2021; Hogan and Warrenfeltz, 2003; McClelland, 1973). Competence denotes that (a) employees understand their role and purpose in organizational performance, (b) they are afforded the chance to apply their competence/competency in fulfilling their role/purpose, and (c) they strive to continuously improve their performance (Hogan and Sherman, 2020; Ryan and Deci, 2001; White, 1959). It is imperative that leaders ensure a shared purpose enabling employees to understand the rationale for their efforts, thus motivating them to perform better (CIPD, 2022a; Hogan and Sherman, 2020; White, 1959). Consequently, organizations heavily spend on *leadership development* to hone leaders’ *competence* aimed at ensuring the organization’s *competitive success* (Beer, Finnström and Shrader, 2016; Holbeche, 2019; Leimbach, 2021).

The latest available figures show that in 2019 organizations globally spent US \$3.5 billion on leadership development ([trainingindustry.com](https://www.trainingindustry.com), 2020). However, the success of such programs is questioned for many reasons, such as, (a) frequently reported strategy implementation failure, allegedly owing to the absence of a competitive advantage and (b) observations that leadership as a mandatory source of competitive advantage has declined, despite *leadership development* initiatives (Beer, Finnström and Shrader, 2016; Hogan and Warrenfeltz, 2003; Holbeche, 2019; Leimbach, 2021; Mintzberg, 1994; Morkel, Nienaber and McNeill, 2021; Pfeffer in Leavy, 2016).

However, a primary and repeated reason for the strategy implementation failure is the physical or psychological ‘unavailability’ of people to implement strategy (Bourgeois and Brodwin, 1984; Gallup, 2021; Kahn, 1990; Nienaber and McNeill, 2022; Pfeffer in Leavy, 2016). Furthermore, it is maintained that leaders do not know how people link to strategy (Hamilton and Sodeman, 2020; Marler and Boudreau, 2017). Hence, people are deployed in positions that do not utilize their competence (CIPD, 2018). Additionally, research has shown that some employees are not afforded the chance to apply their competence even after attending training (Beer, Finnström and Shrader, 2016). In essence, leaders neglect human competence as a major organizational resource to attain performance. As a result, leaders fail to attain a competitive advantage, i.e., aligning intent and execution, by accomplishing coordination and cooperation.

2. Leadership Competence/Competency

The above observations are perplexing since leadership competence can be learned and taught through leadership development interventions/programs (CIPD, 2022a; Hogan and Warrenfeltz, 2003; McClelland, 1973; Parker-Follett, 1933). Leadership competence can be assessed relative to the requirements of the job, identifying deficiencies that need to be improved through training to enable leaders to be effective (Beer, Finnström and Shrader, 2016; CIPD, 2022a; George, 2021; Hogan and Warrenfeltz, 2003; Hogan and Kaiser, 2004; Levenson, 2018; McClelland, 1973; Pfeffer in Leavy, 2016). A range of measurements is available to assess leadership competence. These form part of (a) people analytics which provides information about people to solve business problems and (b) psychological testing (CIPD, 2016, 2022b; Hogan and Warrenfeltz, 2003). Metrics assessing leadership competence are output measures present at the organization’s strategic and operational levels, as illustrated in Figure 1. These metrics include leadership’s capability to (a) set direction, (b) influence and align members towards a common goal, (c) motivate employees to act, and (d) take charge of their own performance, such as in 360° feedback. These metrics are compatible with the four leadership competence domains discussed in the next section: intra-personal, interpersonal, leadership, and business skills (vision/planning, organizing, command, control, etc.).

The four competence domains indicate multi-variacy. However, in scrutinizing research it appears that many leadership development interventions and reform programs dominantly focus on *one* of the *four* competency domains: *interpersonal* skills development (cf. [trainingindustry.com](https://www.trainingindustry.com), 2020). On the surface, this seems a rational approach since research has shown widespread failure of leadership effectiveness due to impoverished interpersonal competence (Hogan and Sherman, 2020; [trainingindustry.com](https://www.trainingindustry.com), 2020). Some scholars justify this single-variable focus. Certainly, it is easier to measure obvious leadership behaviors - such as how people communicate – which flow from interpersonal competence potency, or lack thereof, and which clearly *impact* business results (George, 2021; Gifford and Wietrak, 2022). True, but what about the other variables – what about measuring the *actual* results/outcomes?

Unsurprising, research indicates that leadership development also needs to emphasize business results expected and address, for example, technical and financial skills required (CIPD, 2022a; Hogan and Warrenfeltz, 2003;

Leimbach, 2021; Rothwell, Hohne and King, 2018). However, business skills belong to another of the four competence domains necessary to succeed.

Thus, leadership development programs are incomplete. Some of these programs do not address all four competence domains required to be effective leaders and neither according to a trainees' competence needs (cf. Hogan and Warrenfeltz, 2003). Hence, some scholars point out that leadership is "poorly understood" (Hogan and Kaiser, 2004:75), resulting in a lot of "dogmatic nonsense" (Barnard, 1948:432), and organizations being seduced by "unscientific nostrum" (Pfeffer in Leavy, 2016:3). These lead to disappointing performance outcomes for people (i.e., psychological ill-being) and organizational financial results (Beer, Finnström and Shrader, 2016). Hence, to ensure the effectiveness of leadership development programs, all four competence domains should be addressed according to the assessment needs of the participants.

As previously mentioned, the four competence domains imperative to succeed are (a) intra-personal skills, (b) interpersonal skills, (c) leadership skills, and (d) business skills, all of which are intertwined and interdependent (CIPD, 2022a; George, 2021; Hogan and Warrenfeltz, 2003). Moreover, intra-personal skills are foundational to mastering all other competence domains and the most difficult of the domains to master (Hogan and Warrenfeltz, 2003).

2.1 Intra-Personal Competence

Intra-personal competence relates to self-awareness (internal identity and external reputation), skillful expression of personal qualities, self-regulation, and self-management (cf. CIPD, 2022a; Hogan and Warrenfeltz, 2003). Intra-personal competence domain consists of three components viz. (a) core self-esteem, emotional security, or resiliency, (b) balanced attitudes towards authority, and (c) self-control (Hogan and Warrenfeltz, 2003). Persons with core self-esteem are self-confident, have stable, positive moods, are not easily frustrated, and quickly recover stasis after setbacks. Persons with balanced attitudes towards authority intelligently and appropriately follow rules, respect procedures, are socially appropriate, culturally aware, and within bounds, accept leadership guidance. People with good self-control, in most situations, can restrain their impulses, curb their appetites, stay focused, maintain schedules, and follow routines, i.e., self-disciplined. [Hogan and Warrenfeltz, 2003]. Further, Hogan and Kaiser (2004) suggest that this domain, intra-personal competence, coincides with emotional stability and conscientiousness factors of Wiggins' (1996) *Five Factor Model*. Moreover, people with good intrapersonal skills project integrity – the most important characteristic of good leadership (Kouzes and Posner, 1987). Leaders with core self-esteem and self-control accomplish *cooperation* through actions and exemplification. Leaders with balanced attitudes towards authority - contingently ranging between authoritarian and participatory – accomplish *coordination*. As mentioned, cooperation and coordination are essential in accomplishing competitive advantage, as reflected in Figure 1.

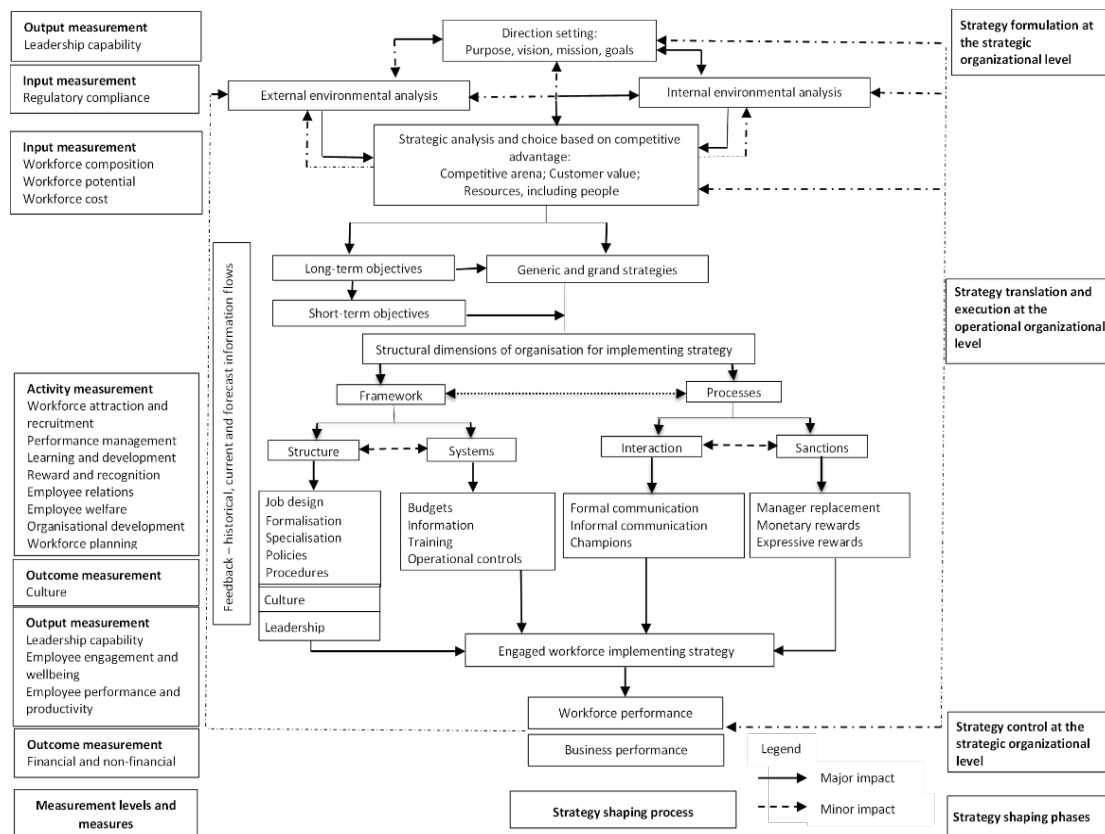
2.2 Interpersonal Competence

Interpersonal competence concerns initiating, building, and maintaining positive relationships with many diverse people (CIPD, 2022a; Hogan and Warrenfeltz, 2003). People with good interpersonal skills are agreeable, calm, socially adept, approachable, and rewarding to deal with (Hogan and Warrenfeltz, 2003). Interpersonal competence consists of four components viz. (a) a disposition to place oneself in the 'shoes of another person,' (b) the skill to anticipate how the other will see the world, i.e., accuracy of interpersonal perception and what the person would expect during an interaction, (c) to integrate the expectations of how the other will respond to the initiating actor's subsequent behavior, and (d) to exercise self-control in focusing on the other person's expectations (Hogan and Warrenfeltz, 2003). According to Hogan and Kaiser (2004) interpersonal competence coincides with extraversion and agreeableness of the *Five Factor Model* of Wiggins (1996). Interpersonal skills impact accomplishing *cooperation*, as reflected in Figure 1.

2.3 Leadership Competence

Leadership competence involves building and maintaining effective teams, which depends on intra- and interpersonal skills (CIPD, 2022a; Hogan and Warrenfeltz, 2003). Leadership skills comprise five components viz. (a) identifying and recruiting talented team members needed to do the job, (b) retaining talented team members, which involves more than monetary rewards, (c) motivating the team to perform by building positive relationships with every member, (d) developing, sharing, and promoting an inspiring vision for the team, that legitimizes the team effort, and instill moral conduct, and (e) perseverance, i.e., being persistent and hard to be discouraged which stems from intra-personal skills (Hogan and Warrenfeltz, 2003). According to Hogan and Kaiser (2004) leadership competence coincides with openness of Wiggins' (1996) *Five Factor Model*, which

relates to vision. Leadership skills impact accomplishing both *coordination* and *cooperation*, as reflected in Figure 1.



Source: Nienaber and McNeill, 2022

Figure 1: Unlocking human competence for effective strategy execution

2.4 Business Competence

Business skills include: *Planning* (to foresee the future by setting the direction as stated in vision, mission, and goal statements and drafting action plans to realize the future), *organizing* (bolstering human and other resources of the enterprise), *command* (directing employees and their interaction), *coordination* (harmonizing all activities and effort throughout the enterprise), *control/monitor* (ensuring everything occurs as planned), *decision-making*, *communication*, and *motivation* which rely on cognitive abilities, rather than the ability to deal with people (CIPD, 2022a; Hogan and Warrenfeltz, 2003). However, to meet business/performance goals, leaders need the cooperation of people in a coordinated fashion (Morkel, Nienaber and McNeill, 2021; Nienaber and McNeill, 2022; Skivington and Daft, 1991). Furthermore, who wants to follow a leader who is incompetent or impotent? By implication, effective leadership requires intra-personal, interpersonal, leadership and business competence, which impact accomplishing *coordination* and *cooperation*, and, thus a competitive advantage, as reflected in Figure 1.

3. Meta Motives

Additionally, people are moved by meta motives in life, i.e., a need for acceptance and approval (relatedness), status, power, and control of resources (competence), and predictability, order, and outside of chaos (autonomy/meaningfulness), which drive successful learning (Baumeister and Leary, 1995; deCharms, 1996; Hogan and Sherman, 2020; Hogan and Warrenfeltz, 2003; White, 1959). All four competence domains, i.e., intra-personal, interpersonal, leadership, and business skills, can be linked to these meta motives which drive learning. The content of the leadership development programs – focusing on one of the four competence domains - discussed in the literature (a focus on soft/interpersonal skills) is, thus, an incomplete representation of leadership development, stemming from a flawed assessment of what is needed, i.e., behavior vs. results (Rothwell, Hohne and King, 2018). Hence, the accounts of failed leadership development programs are not surprising.

As mentioned, results matter most in organizational performance rather than singular individual behaviors. Results derive from leaders accomplishing *coordination* and *cooperation*, which are encapsulated by the structural dimensions of organization for implementing strategy. Coordination and cooperation are, respectively, accomplished by the framework and processes structural dimension of organization to implement strategy (Skivington and Daft, 1991), as shown in Figure 1.

Figure 1 illustrates that the process of strategy formation and execution is intertwined. It allows leaders to align strategic intent and action. Information about leadership capability to align intent and action stems from output measurement, shown on the left hand-side. These measurements are present at the organization's strategic level, where strategy is formulated, and the organization's operational level, where strategy is translated and executed (right hand-side).

Effective leaders create a competitive advantage by accomplishing coordination and cooperation, which align key actions fulfilling strategic intent. The mechanism to accomplish coordination and cooperation is structural dimensions of organization to implement strategy at the organization's operational level, where strategy is translated and implemented into action (middle). The framework dimension arranges coordination and comprises structure and systems. The processes dimension arranges cooperation and comprises interaction and sanctions.

According to Figure 1, effective leadership development programs should advance leadership competence to accomplish competitive advantage through both *coordination* and *cooperation* via the structural dimensions of organization to implement strategy. *Coordination* is accomplished via the framework structural dimension of organization to implement strategy. *Three* of the competence domains, namely, intra-personal, leadership, and business skills, impact the accomplishment of coordination via the structure and system components (i.e., attitude towards authority and identification of talent to do the job at hand specified in job design) of the framework dimension of organization to implement strategy. *Cooperation* is accomplished via the processes structural dimension of organization to implement strategy. All four competence domains, i.e., intra-personal, interpersonal, leadership, and business skills impact the attainment of cooperation via the interaction (core self-esteem, self-control, communication) and reward (retaining talent, interaction fostering good interpersonal relationships with team members) components of the processes structural dimension of organization to implement strategy.

4. Research Question

Given the above exposition, it seems that current leadership development programs often miss the simple logic, i.e., aligning strategic intent with execution, by becoming side-tracked on *fads du jour*. Thus, the question arises whether organizations systematically use leadership development foundational metrics (e.g., direction-setting capacity, trust, etc.) for effective strategy implementation. The next section addresses the research methodology (approach, design, and method) to answer the research question, followed by the presentation and discussion of the findings, and closes with conclusions, contribution, limitations, and directions for future research.

5. Methodology

We observed the direction of reputable scholars in conducting the empirical study (Daniel, 2012; Forza, 2016; Jann and Hinz, 2017; Jansen, 2010; Kelly et al., 2003; Lavrakas, 2008; O'Leary, 2021). The limited empirical evidence on the topic investigated (Hamilton and Sodeman, 2020; Marler and Boudreau, 2017) dictated an exploratory approach (Forza, 2016; Jann and Hinz, 2017; Jansen, 2010; Lavrakas, 2008). The study aimed to uncover insights early on to lay the foundation for future descriptive and explanatory research, instead of conclusive analyses and generalizations (Forza, 2016; Jann and Hinz, 2017; Jansen, 2010).

6. Exploratory Survey

We needed large amounts of standardized factual data to answer the research question. Hence, a survey was appropriate. Survey research systematically collects large amounts of (standardized) factual data, such as behaviors and trends, or opinions, at a relatively low cost, in as short a period, from a diverse sample of respondents, using an instrument, such as a questionnaire, consisting of closed-ended and/or open-ended questions (Forza, 2016; Lavrakas, 2008; O'Leary, 2021). Surveys are classified as exploratory, descriptive, and explanatory (Forza, 2016; Jansen, 2010). Given the exploratory nature of our inquiry, we selected an exploratory survey, however, an underused research design.

Surveys collect data by conducting structured or unstructured face-to-face or telephone interviews or administering a questionnaire via mail or online (Forza, 2016; Jansen, 2010). A disadvantage of survey research is the low response rate due to survey fatigue, the proliferation of junk emails, and perceptions of bias (Fulton, 2016; O'Leary, 2021). The advantages of surveys include: (a) Many potential respondents, with a range of views, and over a large geographical area can be reached, (b) Responses allow for comparisons, (c) Generate standardized, quantifiable numeric data, (d) Generate textual data through open-ended questions, and (e) Confidential and anonymous responses (Forza, 2016; O'Leary, 2021).

7. Sample

Exploratory surveys use a small number of responses to gain insight which is more important than a large sample size that allows for generalizations (Forza, 2016; Jann and Hinz, 2017; Jansen, 2010; Lavrakas, 2008). To be useful, the small number of respondents should be diverse and cover all existing relevant varieties of the phenomenon studied (Forza, 2016; Jansen, 2010, Lavrakas, 2008). 'Small number', however, is not adequately addressed by these scholars. Forza (2016) and Daniel (2012) address the issue of an acceptable number constituting small. Forza (2016) hints at no minimum response rate for exploratory surveys while providing specific guidance on minimum number of responses for descriptive and explanatory surveys. Regardless, Forza (2016) and Daniel (2012) concur that: (a) The sample size should be adequate to satisfy the objectives of the study, (b) Return useful results with scientific and practical value, (c) Should not violate the assumptions of statistical analyses, and (d) In terms of ethical considerations, one should use the smallest sample necessary to satisfy the objectives of the study. Based on these guidelines, Daniel (2012) indicates a sufficient parameter of 20 to 150 responses for exploratory research, pilot studies, and pretesting.

8. Instrument

We based our questionnaire on an intensive literature review (Forza, 2016; Jan and Hinz, 2017; O'Leary, 2021). Trustworthiness was enhanced by attention to construct identification, the questions were linked to the study objectives, and we followed basic design rules, namely: Selecting an appropriate data collection method, attending to flow, layout and the wording of questions, and the face-to-face pre-testing of the questionnaire with (HR) experts before the main study (Forza, 2016; O'Leary, 2021). The pre-test indicated that an online self-report questionnaire would be a better data collection option than face-to-face interviews. Consequently, we adjusted the questionnaire and the wording of a few items to improve readability.

The questionnaire comprised two sections. One collected demographic variables, such as the organization's size in terms of number of employees. The second section pertained to respondents' perceptions about the use of people analytics, including leadership development, to implement strategy for organizational performance. Examples of questions in this section include: "My organization uses the following metrics (accompanied by a short description of the metric) to manage organizational performance"; and "How do these metrics link with competitive advantage." The questionnaire contained 16 questions, 14 of which were closed-ended and two of which were open-ended. The survey was conducted following ethical research principles. Ethical clearance was obtained from the relevant institutions and participation was voluntary based on informed consent, anonymity, and confidentiality. Participants could withdraw at any stage without penalties.

9. Our Research Site

We used purposive sampling, which is appropriate for exploratory surveys (Forza, 2016; Jansen, 2010). We selected the South African Board for People Practices (SABPP) as data collection site. The SABPP was chosen for its many diverse members in terms of economic activity, size of organizations, and potential use of people analytics in implementing strategy. Furthermore, SABPP members could be informed of and support advances in HR practices, including workforce measurement in support of organizational performance. Thus, SABPP members would be the best source of information to answer the research question investigated, according to survey research scholars (Forza, 2016; Lavrakas, 2008; O'Leary, 2021).

We shared a cross-sectional survey link with the SABPP in June 2018. They (SABPP) distributed the link to their members, inviting their voluntary, anonymous, and confidential participation based on the stated purpose and objectives of the survey, the importance of participation, and the promise that aggregated anonymized survey results would be shared with both the SABPP and interested respondents. The survey closed in September 2018. Anonymized feedback was provided to the interested parties in January 2021.

10. Findings and Discussion

Sixty-one responses were received, which met the norms for exploratory surveys (i.e., between 20 and 150) and trustworthy criteria as discussed by Daniel (2012), Forza (2016), Jansen (2010), and Lavrakas (2008). Most respondents (36/61) reported using leadership development metrics in strategy execution.

10.1 Responses to Close-Ended Questions

Most respondents (10) measured leadership development on an annual basis, followed by a quarterly (seven), 2-yearly (four), 5-yearly (one) and six-monthly (one) basis. Only 23 of the 36 respondents completed the section on control variables. The 23 responses still met the norms for exploratory surveys. Responses were diverse in terms of:

- Profile of respondents: specialists (12), top managers (seven), frontline staff (four); 21 had more than 10 years' experience, 14 held a post-graduate degree, seven a degree, and two a certificate.
- Respondents represented a range of industries, viz. electricity, gas, and water (five), finance and business service (five), transport, storage, and communication (seven), construction (three), wholesale trade, commercial agents, and allied services (one), mining and quarrying (two).
- The business size ranged from 21-50 employees (three), 51-200 employees (two), and more than 500 employees (18).
- Perception of performance ranged from *excellent*, i.e., they achieved their goals 80-100% of the time (six), to *good*, i.e., they achieved their goals 60-79% of the time (10), and *average*, i.e., they achieved their goals 40-59% of the time (seven), suggesting room for improvement.
- Respondents reported the application of a range of strategies, and some employed more than one strategy, i.e., growth (18), maintenance (15), low cost (eight), differentiation (eight), and focus (seven).
- Respondents' satisfaction with the results produced by these strategies ranged from very successful (five), somewhat successful (12), neutral (five), and very unsuccessful (one), suggesting room for improvement. Reasons for somewhat successful, neutral, and very unsuccessful related to either applying an inappropriate strategy to achieve the organizational goals or the organization's goals were inappropriate.

10.2 Responses to the Open-Ended Question: Competitive Advantage

An open question asked respondents how the people metrics they used in implementing strategy link to competitive advantage. Sixteen respondents answered this question. Responses to this question varied. Most of the responses were incoherent (e.g., "strategic input" and "planning, organizing"), even from respondents who indicated that their organizations achieved excellent performance.

Two respondents from regulated industries such as electricity, gas, and water responded that competitive advantage is irrelevant as they are not subject to competition. Four respondents (three top managers and one specialist) from diverse industries referred to people, but not necessarily their competence, to achieve a competitive advantage. Two respondents (a specialist and a top manager) from construction referred to innovation as part of achieving competitive advantage. These responses are consistent with the literature discussed, i.e., people are the most important resource to implement strategy, while innovation unlocks peoples' competence to create value (cf. Barney, 1991; Becker, 1962; CIPD, 2016; Holbeche, 2022; Teece, Peteraf and Lee, 2016).

In total, six responses from diverse industries partly address accomplishing coordination and cooperation that align key actions fulfilling strategic intent, as discussed (Nienaber and McNeill, 2022; Skivington and Daft, 1991). However, most of these responses signify that leaders neglect human competence as a major organizational resource to attain performance. Therefore, it can be inferred that leaders fail to attain coordination and cooperation, and thus a competitive advantage aligning intent and execution. Hence, it is questionable if the leadership development programs based on leadership metrics used by these respondents address the leadership competence domains that develop skills to create a competitive advantage accomplished by coordination and cooperation. Furthermore, it appears that the respondents did not view competitive advantage entirely as indicated in the discussed literature. This observation supports the responses showing organizational performance/results can be improved.

Thus, leadership development metrics used by these respondents may not have been applied to their full advantage (i.e., identifying competence domains to be developed) to accomplish competitive advantage

ensuring effective strategy execution (Hogan and Warrenfeltz, 2003; Levenson, 2018). Some answers imply that the respondents did not have a clear view of the link between the people metrics used and organizational goal achievement, creating a competitive advantage, and link with business performance (CIPD, 2018, 2022a; Hamilton and Sodeman, 2020; Levenson, 2018; Marler and Boudreau, 2017; Rothwell, Hohne and King, 2018). These responses suggest an ineffective integration of leadership development to effective strategy execution, but instead and possibly *fads du jour*.

These responses corroborate the literature, namely, investments in leadership development do not consistently benefit organizations in guiding effective strategy execution based on competitive advantage arising from leaders accomplishing coordination and cooperation that align key actions to fulfill strategic intent (Hogan and Warrenfeltz, 2003; Hogan and Kaiser, 2004; Holbeche, 2019; Leimbach, 2021; Rothwell, Hohne and King, 2018).

11. Conclusions, Contribution, Limitations, and Directions for Future Research

Given the foregoing, the study answered the research question. As discussed, the responses to the survey suggest that participating organizations (a) did not systematically use leadership development foundational metrics for effective strategy execution, (b) as the leadership development programs have missed the simple logic, i.e., aligning strategic intent with execution, (c) by accomplishing competitive advantage through coordination and cooperation, and thus (d) ineffectively linked metrics to competitive advantage, the foundation of an effective strategy. By implication the leadership metrics used did not identify the leadership competence domain i.e., intra-personal, interpersonal, leadership or business skills, to develop to guide effective strategy implementation. Thus, it can be concluded that the leadership development programs of the participants were not a guide to effective strategy execution but possibly *fads du jour*. This conclusion is, regrettably and predictably, consistent with the literature as discussed.

This paper offers actionable information based on sound theory and corroborated by an exploratory survey. It shows how leadership competence i.e., intra-personal, interpersonal, leadership, and business skills, links to accomplishing coordination and cooperation, the crux of competitive advantage, aligning key actions fulfilling strategic intent, guiding successful strategy execution, and consequently attaining organizational performance or results. The link between leader competence (domain) and competitive advantage has not explicitly been made before and thus we extend the literature on leadership development to guide effective strategy execution. The survey met norms for exploratory surveys and trustworthy criteria, and thus contributes to valid conclusions. Organizations can use this study's information to design comprehensive programs/interventions aimed at leadership development, hopefully, and comprehensively, to enact leadership strategy execution skills guided in the four essential key domains by the mandatory requirement of *competitive advantage*. Bottom line: This all arises and is the essence of leaders accomplishing coordination and cooperation, as shown in Figure 1. Current and singular-variant leadership development programs are inadequate – the world is more complex from the simple-obvious, easily measurable, and descriptive.

Let us acknowledge the obvious. The cross-sectional nature of the study is the main limitation. Hence, we recommend further descriptive and explanatory research to enable broader generalizations. Specifically, how the content of leadership development programs initiated in organizations link with the four competence domains, accomplishing coordination and cooperation, to create a competitive advantage guiding effective strategy execution to attain organizational performance.

References

- Aaker, D.A. and Moorman, C. (2019) *Strategic Market Management* (11th ed.), Wiley, USA.
- Ansoff, H.I. (1965) *Corporate Strategy: Business Policy for Growth and Expansion*, McGraw-Hill, USA.
- Balogun, J., Best, K., and Lê, J. (2015) "Selling the object of strategy: How frontline workers realize strategy through their daily work", *Organization Studies*, DOI: 10.1177/0170840615590282.
- Barnard C.I. (1970 [1948]) The nature of leadership, In: Merrill HF (ed.), *Classics in Management*, American Management Association, Washington DC (pp 432–460).
- Barney, J. (1991) "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17, No. 1, pp 99–120.
- Baumeister, R.F. and Leary, M.R. (1995) "The need to belong: Desire for interpersonal attachments as a fundamental human need", *Psychological Inquiry*, Vol. 117, No. 3, pp 497–529.
- Becker, G.S. (1962) "Investment in human capital: A theoretical analysis", *The Journal of Political Economy*, Vol. 70, No. 5, Part 2, pp 9–49.
- Beer, M., Finnström, M. and Shrader, D. (2016) "Why leadership training fails – and what to do about it", *Harvard Business Review*, Vol. 94, No. 10, pp 50–57.

- Bourgeois, I.J. and Brodwin, D. (1984) "Strategic implementation: Five approaches to an elusive phenomenon", *Strategic Management Journal*, Vol. 5, pp 241-264.
- CIPD. (April 28, 2022a) *Leadership Factsheet*, Chartered Institute of Personnel and Development, London.
- CIPD. (September 30, 2022b) *People Analytics Factsheet*, Chartered Institute of Personnel and Development, London.
- CIPD. (2018) *Over-skilled and Underused: Investigating the Untapped Potential of UK Skills*, Chartered Institute of Personnel and Development (CIPD), London.
- CIPD. (2016) *People Measurement and Reporting: From Theory to Practice*, Chartered Institute of Personnel and Development (CIPD), London.
- Daniel, J. (2012) Choosing the Size of the Sample, In: *Sampling Essentials: Practical Guidelines for Making Sampling Choices* (pp 236–253), Sage, Thousand Oaks.
- deCharms, R. (1996) *Personal Causation*, Academic Press, New York.
- Drucker, P.F. (1985) "The discipline of innovation", In: *The Best of Harvard Business Review*, 2002, R0208F.
- Forza, C. (2016) Surveys, In: Karlsson, C. (Ed.), *Research Methods for Operations Management* (2nd ed.), Routledge, London (pp. 79–164).
- Fulton, B.R. (2016) "Organizations and survey research: Implementing response enhancing strategies and conducting nonresponse analyses", *Sociological Methods and Research*, Vol. 47, No. 2, pp 240-276.
- Gallup. (2021) *State of the Global Workplace: 2021 Report*, Gallup, Washington, D.C.
- George, S. (December 2021) *Competence and Competency Frameworks*, Chartered Institute of Personnel and Development (CIPD), London.
- Gifford, J. and Wietrak, E. (2022) *People Performance: An Evidence Review: Practice Summary and Recommendations*, Chartered Institute of Personnel and Development (CIPD), London.
- Hamilton, R.H. and Sodeman, W.A. (2020) "The questions we ask: Opportunities and challenges for using big data analytics to strategically manage human capital resources", *Business Horizons*, Vol. 63, No. 1, pp 85–95.
- Hogan, R. and Kaiser, R. (2004) "What we know about leadership", *Review of General Psychology*, Vol. 9, No. 2, pp 169-180.
- Hogan, R. and Sherman, R.A. (2020) "Personality Theory and the Nature of Human Nature", *Personality and Individual Differences*, Vol. 152 (article number 109561).
- Hogan, R. and Warrenfeltz, R. (2003) "Educating the modern manager", *Academy of Management Learning and Education*, Vol. 2, No. 1, pp 74-84.
- Holbeche, L. (2022) *Aligning Human Resources and Business Strategy* (3rd ed.), Routledge, London.
- Holbeche, L. (2019) "Shifts in organizational culture when implementing agility", *Journal of Creating Value*, Vol. 5, No. 2, pp 124–138, DOI: 10.1177/2394964319853164.
- Jann, B. and Hinz, T. (2017) Research Question and Design for Survey Research, in Wolf, C., Jove, D., Smith, T.W., and Fu, Y-C. (Eds.), *The SAGE Handbook of Survey Methodology* (pp 105–121), Sage, [online].
- Jansen, H. (2010) "The logic of qualitative survey research and its position", *Field of Social Research Methods, FQS*, Vol. 11, No. 2, [online] <http://www.qualitative-research.net/>
- Kahn, W.A. (1990) "Psychological conditions of personal engagement and disengagement at work", *Academy of Management Journal*, Vol. 33, No. 4, pp. 692–724.
- Kelly, K., Clark, B., Brown, V., and Sitzia, J. (2003) "Good practice in the conduct and reporting of survey research", *International Journal for Quality in Health Care*, Vol. 15, No. 1, pp 261-266.
- Kouzes, J.M. and Posner, B.Z. (2002) *The Leadership Challenge* (3rd ed.), Jossey-Bass, San Francisco.
- Lavrakas, P.J. (2008) *Encyclopedia of Survey Research Methods*, Sage, Thousand Oaks.
- Leimbach, M. (May 18, 2021) "2021 Leadership Development Survey: The times are a changing ... and so are some leadership development trends and best practices in response to tremendous challenges last year", Available at <https://trainingmag.com/annual-leadership-development-survey-the-times-they-are-a-changing/> accessed 8-13-2022.
- Levenson, A. (2018) "Using workforce analytics to improve strategy execution", *Human Resource Management*, Vol. 57, No. 3, pp 685–700.
- Leavy, B. (2016) "Jeffrey Pfeffer: Stop selling leadership malarkey", *Strategy & Leadership*, Vol. 44, Issue: 2, pp 3-9, Available at <https://doi.org/10.1108/SL-01-2016-0003>
- Marler, J.H. and Boudreau, J.W. (2017) "An evidence-based review of HR analytics", *The International Journal of Human Resource Management*, Vol. 28, No. 1, pp 3–26.
- McClelland, D.C. (January 1973) "Testing for competence rather than 'intelligence'", *American Psychologist*, pp 1–14.
- Mintzberg, H. (1994) *The Rise and Fall of Strategic Planning*, The Free Press, New York.
- Morkel, A., Nienaber, H. and McNeill, R.G. (2021) "Time for change: Tools enhancing competitive advantage in wine business", *Journal of Global Business and Technology*, Vol. 17, No. 2, pp 20–40.
- Nienaber, H. and McNeill, R.G. (2022) Leadership diagnostic: Unlocking human competence for effective strategy execution, In: Matos, F. & Rosa, A. (Eds.). *Proceedings of the 18th European Conference on Management Leadership and Governance (ECMLG)*, Academic Conferences International, Ltd., Reading, UK, (pp 347-356).
- O'Leary, Z. (2021) *The Essential Guide to Doing Your Research Project* (4th ed.), Sage, Thousand Oaks.
- Parker-Follett, M. (1970 [1933]) The essentials of leadership, In: Merrill HF (ed.) *Classics in Management*, American Management Association, Washington, DC (pp 295–308).
- Porter, M. (1985) *Competitive Advantage: Creating and Sustaining Superior Performance*, The Free Press, New York.

- Rothwell, W.J., Hohne, C.K. and King S.B. (2018) *Human Performance Improvement Building Practitioner Performance* (3rd ed.), Routledge, New York.
- Ryan, R.M. and Deci, E.L. (2001) "On happiness and human potentials: A review of research on hedonic and eudaimonic well-being", *Annual Review of Psychology*, Vol. 52, No. 1, pp 141-66.
- Skivington, J.E. and Daft, R.L. (1991) "A Study of Organizational 'Framework' and 'Process' Modalities for the Implementation of Business-level Strategic Decision", *Journal of Management Studies*, Vol. 28, No. 1, pp 45–68.
- Teece, D., Peteraf, M. and Leih, S. (2016) "Dynamic capabilities and organizational agility: Risk, uncertainty and strategy in the innovation economy", *California Management Review*, Vol. 58, No. 4, pp 13-35.
- Training Industry. (2020) *The Size of the Leadership Training Market*, Available at <https://trainingindustry.com> accessed 8-12-2022.
- White, R.W. (1959) "Motivation reconsidered: The concept of competence", *Psychological Review*, Vol. 66, No. 5, pp 297–333.
- Wiggins, J.S. (1996) *The Five-Factor Model of Personality*, Guilford, New York.

Abusive Supervision and Organizational Resilience: The Role of Employees' Psychological Capital

Faith Njaramba¹, Daniel Skarlicki² and John Olukuru¹

¹Strathmore University, Nairobi, Kenya

²University of British Columbia, Vancouver, Canada

fnjaramba@strathmore.edu

skarlicki@sauder.ubc.ca

jolukuru@strathmore.edu

Abstract: Crises present important opportunities to study leadership. While previous research has established that abusive supervision occurs more frequently during a crisis, its effect on organizational resilience has not been studied. Micro-level mechanisms through which abusive supervision affects organizational resilience are also largely missing from prior studies. The aim of the present research was to investigate how abusive supervision relates to organizational resilience via employees' psychological capital through the lens of the job-demands resources theory. Multi-level structural equation modelling using Stata version 18 was used to test a mediation model using a sample of 301 small and medium sized enterprises from Kenya. Results revealed that abusive supervision erodes organizational resilience however employees' psychological capital offsets the negative effects of abusive supervision. Ultimately, this paper showed that psychological capital can aid in lessening the deleterious effects of abusive supervision in crisis.

Keywords: Abusive supervision, Employee psychological capital, Organizational resilience, Small and medium sized enterprises, Kenya

1. Introduction

Abusive supervision, which refers to hostile verbal and nonverbal behaviours excluding physical contact (Tepper, Simon and Park, 2017), occurs more frequently in high stress environments. However, study has yet to explore how abusive supervision affects organizational ability to survive or thrive in crisis. It is important to assess how abusive supervision relates to organizational resilience in a crisis because this is when leaders are at their worst and many more crises are likely to occur in future. Currently, abusive supervision research is skewed towards subordinate-focused outcomes (Bhattacharjee and Sarkar, 2022) as opposed to organizational outcomes. Additionally, despite calls for more research in different cultures in the world (Tepper, Simon and Park, 2017), studies on abusive supervision from Africa are missing (Bhattacharjee and Sarkar, 2022). Moreover, Annarelli and Nonino (2016) called for more studies on resilience of small to medium enterprises (SMEs) because SMEs have a distinct approach in dealing with crisis. The present study is based in Africa, specifically Kenya.

SMEs are dominant in the enterprise landscape in Kenya (Osano, 2019) which is East Africa's largest economy (Mustafa and Hughes, 2018). SMEs in Kenya refer to enterprises that employ between ten and a hundred employees (Kenya National Bureau of Statistics, 2016). Kenya has a mix of both licensed and unlicensed SMEs with the unlicensed ones being poorly understood and insufficiently supported (Crick *et al*, 2018). SMEs in Kenya operate under a hostile environment characterized by limited access to managerial/human capital and financial resources and such challenges have made the SMEs highly dynamic and successful in the environment (Mustafa and Hughes, 2018). Despite scarce resources, this present study suggests that SMEs in Kenya could leverage on leader-follower relationships to enhance resilience. Teo *et al* (2017) proposed a relational approach to resilience where leaders can not only draw from tangible resources such as finances but also from intangible resources such as social relationships between leaders and followers to facilitate recovery during crisis. Organizational resilience is important because it predicts an organizational ability to survive or thrive in a crisis and is under explored.

There are diverse findings among scholars regarding empirically proven antecedents of organizational resilience. Resources such as leadership styles have been found to influence organizational resilience (Duchek, 2020), however positive leadership style have received the most attention. Additionally, the relationship between the leadership style and organizational resilience might not be direct. Employees' psychological capital can occur as a function of leadership style (Avey, 2014; Wu and Nguyen, 2019). Previous research noted that understanding the effect of psychological capital and organizational resilience for organizations going through any type of restructuring is important (Prayag *et al*, 2020).

The aim of the present study was to investigate how abusive supervision relates to organizational resilience via employees' psychological capital. Insights obtained will help SMEs in selecting and/or training leaders to be non-

abusive so that they do not detract from psychological resources of employees which are important for resilience.

The remainder of the paper is structured as follows: the next section discusses organizational resilience and why it is important leading to the hypotheses for the study. The results and general discussion follow including the limitations of the research, and some avenues for future research.

2. Literature Review and Hypothesis Development

2.1 Organizational Resilience

Organizational resilience has been defined as a capability, capacity, characteristic, outcome, process, behavior, strategy, approach, type of performance or a mix of these (Hillmann and Guenther, 2021). Although resilience is multi-determined (Annarelli and Nonino, 2016), the present study is interested in organizational resilience as an important capability for SMEs. Few studies investigated organisational resilience in the context of SMEs (Zighan *et al*, 2022). Organizational resilience is important because it represents an organization's perceived capacity to overcome disruptions and accept change (Pathak and Joshi, 2020). Salwan and Gada (2018) proposed that organizational resilience is the capacity to alleviate, bounce back as quickly as possible from a crisis. The capacity to alleviate using existing capabilities is based on the planning aspect of resilience, while bouncing back is based on an adaptive capacity of resilience (Annarelli and Nonino, 2016; Prayag *et al*, 2020). The literature recognizes two major components of resilience: adaptive and planned (Prayag *et al*, 2020; Jalil *et al*, 2021). Planned resilience involves the use of existing capabilities and resources, as exemplified in business continuity and risk management planning which are predominantly pre-disaster activities (Prayag *et al*, 2020). Adaptive resilience emerges during the crisis phase as organizations develop new capabilities through dynamically responding to emergent situations that are outside of their plans (Prayag *et al*, 2020; Jalil *et al*, 2021).

Resilience occurs at different levels within an organization and these contribute to organizational resilience (Duchek, 2020). Lengnick-Hall *et al*, (2011) noted that organizational resilience can be formed from human characteristics. Noteworthy are the psychological antecedents of organizational resilience which have not been studied. The present study is interested in psychological capital which is a positive personal resource that can lead to individual and organizational success (Laschinger and Fida, 2014; Lupşa *et al*, 2020). Psychological capital refers to intangible capital that facilitates work outcomes and includes four positive psychological resources: hope, efficacy, resilience, and optimism, or the acronym HERO (Luthans, Youssef and Avolio, 2007). Avey *et al* (2021) underscored that psychological capital has emerged as an important mediating variable in leadership research. The theory that explains the link between abusive supervision and organizational resilience is discussed below.

The job demands- resources theory (JD-R) by Demerouti, Bakker, Nachreiner, Schaufeli and Wilmar (2001) predicts the dual function of demands and resources by integrating the study of stress and motivation at work. JD-R is based on the assumption that despite every occupation having its own risks associated with job stress, these factors can be classified as either job demands or job resources (Bakker and Demerouti, 2007). Job demands are the initiators of exhaustion while job resources initiate motivation (Demerouti and Bakker, 2011). Job demands include psychological, social, physical or organizational components of a job that require constant psychological and/or physical effort and are at certain psychological and/or physiological costs (Demerouti and Bakker, 2011). Job resources can exist at organizational level to include resources such as salaries and wages, at interpersonal level to include resources such as supervisor and co-worker support and at task level to include resources such as task significance and autonomy (Demerouti and Bakker, 2011). Job-demand resources theory specifies how demands and resources interact and predict important organizational outcomes (Demerouti and Bakker, 2011). The assumptions of the theory hold not only for self-reports but also for objective data (Demerouti and Bakker, 2011). Previous research noted that when employees have psychological resources they are more likely to have specific resources to fit job demands or can generate resources that can assist them to develop resources that can fit demands (Hobfoll, 2002). The present study draws from the JD-R theory to explain abusive supervision as a job demand which needs to be matched with a job resource, in this case, employees' psychological capital to boost organizational resilience. The conceptual framework for the present study is displayed.

2.2 Conceptual Framework

The first aim of this study was to assess how abusive supervision relates to organizational resilience. Second we explore how abusive supervision relates to employees' psychological capital. Third we assess how employees' psychological capital relates to organizational resilience. Last we explore the mediating role of employees'

psychological capital in the relationship between abusive supervision and organizational resilience. **Figure 1** shows our conceptual framework. The left side of the vertical dotted line includes individual level variables while the right side includes organizational level variables.

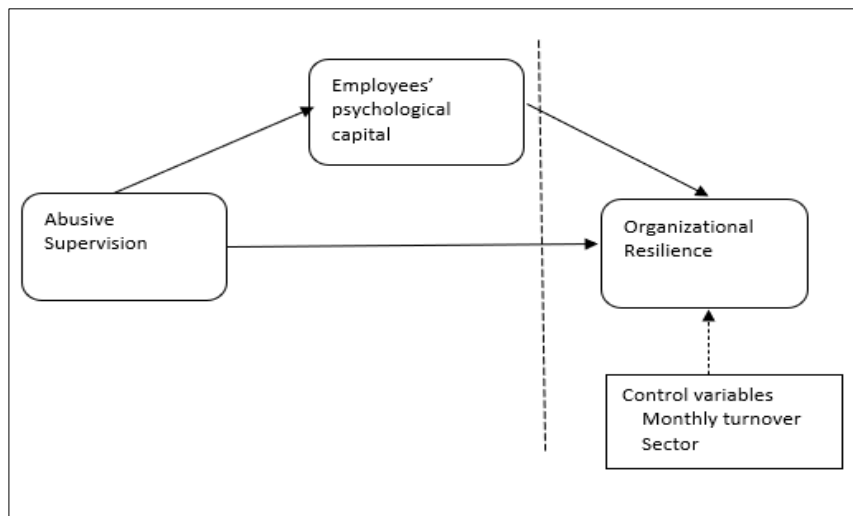


Figure 1: Conceptual framework

2.3 Hypothesis Development

2.3.1 Abusive supervision and organizational resilience

Drawing from JD-R theory, abusive supervision will likely erode organizational resilience because abusive supervision serves as a job demand that erodes resources that are needed for resilience. Previous research noted that job demands and resources interact to predict strain and motivation at work (Tummers and Bakker, 2021). Destructive leadership styles serve as job demands (Tummers and Bakker, 2021) and abusive supervision is a form of destructive leadership that refers to sustained actions of leaders such as being rude, using offensive names, withholding important information, threatening employees with the loss of job among others (Keashly, 1998). Notably, abusive supervision does not refer to leader behaviours per se but to followers' subjective assessments of these behaviours (Tepper, 2000). Previous research has predominantly dealt with abusive supervision eroding subordinate outcomes such as job satisfaction, trust in leaders, intrinsic motivation, physical health, perceived stress and self-efficacy etc. and hardly analyzed organizational outcomes, with only financial performance being assessed (Fischer *et al*, 2021). The present study therefore hypothesizes that:

H1: Abusive supervision negatively relates to organizational resilience.

2.3.2 Abusive supervision and employees' psychological capital

Further drawing on JD-R theory, abusive supervision is likely to erode employees' psychological capital because abusive supervision is a demand on the psychological capital. Psychological capital is composed of the positive states of self-efficacy, hope, optimism and resilience (Luthans *et al*, 2007; Wu and Nguyen, 2019). Self-efficacy is an individual sentiment of being able to take on and successfully execute challenging duties, hope is characterized by perseverance towards goals and planning paths to succeed, optimism is about making positive attribution about now and future success while resilience is the capacity to sustain and bounce back after adversity to attain success (Luthans *et al*, 2007). Previous research found that psychological capital as a resource is not stable but it is affected by situational influences such as leadership style (Ahmad *et al*, 2019). Abusive supervision is however complex since it depends on the followers' perceptions of whether an act is abusive or not and this depends on several issues including culture, personality and the perceived power that the leaders hold over a follower (Tepper *et al*, 2007) hence the need to test abusive supervision and how it relates to employees' psychological capital. There is not much evidence to prove the antecedents of psychological capital (Wu and Nguyen, 2019) however leadership styles including authentic, transformational, abusive and empowering leadership as well as psychological health and organizational support have been brought out in literature (Vilariño del Castillo and Lopez-Zafra, 2022). The present study hypothesizes that:

H2: Abusive supervision negatively relates to employees' psychological capital.

2.3.3 Employees' psychological capital and organizational resilience

Psychological capital provides employees important personal resources for coping with organizational demands and enhancing performance (Bakker and Schaufeli, 2008). Tucci and Clouse (2005) noted that the importance of psychological capital becomes clear particularly when small firms have to overcome challenges in order to achieve success. Positive psychological capital enhances the level at which a person utilizes their human and/or social capital and it is especially important for entrepreneurial ventures who may have scarcity of other resources such as finances as compared to long existing organizations (Tucci and Clouse, 2005). Organizational resilience helps an organization bounce back to achieve its objectives and realized opportunities in the face of crisis (Ruiz-Martin, Lopez-Paredes and Wainer, 2018). This present study viewed that the foundation of organizational resilience lies in managing employee resources particularly, their psychological capital which sets an organization up for success in crisis and hypothesizes that:

H3: Employees' psychological capital positively relates to organizational resilience.

2.3.4 The relationship between abusive supervision and organizational resilience mediated by employees' psychological capital.

In line with JD-R theory when employees have psychological resources they are more likely to fit job demands from an abusive supervisor. While abusive supervision is a demand that drains psychological capital, this present study suggests that subordinates may derive the psychological capital from other sources such as family and friends (Luthans, Luthans and Avey, 2014) not just from supervisors. Psychological capital is a form of intangible capital that facilitates work outcomes (Avey et al, 2011; Pitichat et al, 2018). The positive nature of psychological capital triggers positive affective states that broaden thought action repertoires for employees (Avey, Agarwal and Gill, 2021). Research indicates that individuals with high psychological capital have a strong belief in their ability to achieve their goals, they form positive anticipations in dealing with demanding situations and they positively contribute to harmonizing adverse situations (Ahmad et al, 2019; Luthans et al, 2007). Previous research noted that the relationship between leaders and followers affects organizational outcomes through the intermediary mechanism of psychological resources hence placing emphasis on quality relationships between leaders and employees who they lead (Liao et al, 2017). Fang et al (2019) found that psychological capital mediated organization wide interventions such as leadership and organizational consequences as an important psychological resource. Mediators of abusive supervision-organizational outcomes are however scant in literature.

The present study therefore hypothesizes that:

H4: The relationship between abusive supervision and organizational resilience is mediated by employees' psychological capital.

3. Methods

3.1 Sample and Procedures

This present study adopted positivism research philosophy to deductively analyze how abusive supervision relates to organizational resilience through employees' psychological capital. The study adopted cross-sectional survey design and quantitative research methods in line with positivism philosophy to capture objective reality using validated measurements. The data were drawn in the middle of the COVID pandemic, which has been described as one of the more challenging crises of our time.

Three-hundred and one SMEs took part in the study. Two employees per SME were surveyed to obtain better estimates of reliability by simultaneously recognizing multiple raters (Gerhart et al, 2000). In terms of demographics, 52.66% of the respondents were male while 46.68% were women. A majority of the respondents (26.08%) were between 35-39 years, the majority of the respondents (43.85) had diploma level of education and majority of the respondents (29.07) had a role in business continuity. The study complied with ethical standards and obtained required ethical approvals and permissions. Once the researchers received permission to conduct the data collection from various decision makers in the SMEs, they approached employees. All participation was completely voluntary. Employees were requested to report on abusive supervision perceptions of their leaders, their own psychological capital and organizational resilience through questionnaires administered by the researcher with the help of trained research assistants.

Abusive leadership was assessed using Tepper's (2000) abusive leadership questionnaire based on a five-point Likert scale. Psychological capital of employees was measured using the psychological capital questionnaire

(PCQ) by Luthans et al (2007) on a five-point Likert scale. Organizational resilience was assessed on a five-point Likert scale using the short version of the benchmark resilience tool (BRT) by Whitman et al (2013).

3.1.1 Control variables

The study controlled for monthly turnover and sector which had been found to influence resilience of firms (Sullivan-Taylor and Branicki, 2011; Biggs, 2020). Monthly turnover is important in the present study to indicate firm size among the small and medium categories which relate to resilience (Sullivan-Taylor and Branicki, 2011). Resilience of service sector firms is important because different sectors can be disproportionately affected by crisis (Biggs, 2020).

3.1.2 Reliability of the measures

Cronbach alpha was used to determine the internal reliability of the variable measures using a required threshold is .70 (Hair, Ringle and Sarstedt, 2011). The Cronbach alpha values for this study were as follows: abusive supervision 0.947, organizational resilience 0.917 and employees' psychological capital 0.909 therefore above threshold. Discriminant validity which is the extent to which one construct differs from another was assessed from the correlations in **Table 1** whereby the correlation between two different variables should be lower than 0.85 (Voorhees *et al*, 2016), this being the case discriminant validity for the present study variables was ascertained.

Table 1: Correlation Table

	Abusive	PSY	OrganRes	ServiceD	Turnov~D
Abusive	1.0000				
PSY	-0.6159 0.0000	1.0000			
OrganRes	-0.6304 0.0000	0.6852 0.0000	1.0000		
ServiceD	-0.1284 0.0016	0.0747 0.0668	0.1214 0.0028	1.0000	
TurnoverD	-0.0298 0.4660	0.0361 0.3766	-0.0400 0.3271	0.0260 0.5235	1.0000

In **Table 1**, Abusive represents abusive supervision, PSY represent employees' psychological capital, OrganRes represents organizational resilience, ServiceD represents service sector dummy variable and Turnov~D represents monthly turnover of Kes 1 million dummy variable.

The correlations from **Table 1** show that abusive supervision has a significant negative relationship to employees' psychological capital, organizational resilience and service sector firms. The relationship between abusive supervision and monthly turnover is negative but not significant. Multilevel structural equation modeling used to test the study hypothesis is described below.

4. Results

Due to the nested nature of data, we used multilevel structural equation modelling using gsem function on Stata version 18 to test the mediation model. The interclass correlation (ICC) for the multilevel model was .023 which is less than .05 hence does not indicate significant clustering (Pituch and Stevens, 2015). The goodness of fit statistics indicated that the overall model was a good fit. The root mean squared error of approximation (RMSEA) was 0.000 hence a close fit (Pituch and Stevens, 2015), comparative fit index (CFI) value was 1.000 and Tucker-Lewis Index (TLI) value was 1.008 which are both high (>.95) (Pituch and Stevens, 2015) represented a very good fit. Standardized root mean squared residual (SRMR) value was 0.005 hence a close-fitting model (i.e. 0 to .05 is close fitting (Pituch and Stevens, 2015)).

First, we examined the relationship between abusive supervision and organizational resilience. Results revealed a significant negative effect of the model, $p < .0001$, $R^2 = -0.31$. The relationship between abusive supervision

and employees' psychological capital was also significant and negative, $P < .0001$ $R^2 = -0.45$. The relationship between employees' psychological capital and organizational resilience was significant and positive $p < .0001$, $R^2 = 0.62$. Lastly, controlling for monthly turnover and sector, employees' psychological capital mediated the relationship between abusive supervision and organizational resilience ($p < .0000$, $R^2 = 0.62$). These are shown in **Figure 2** below. In summary, all hypotheses were supported.

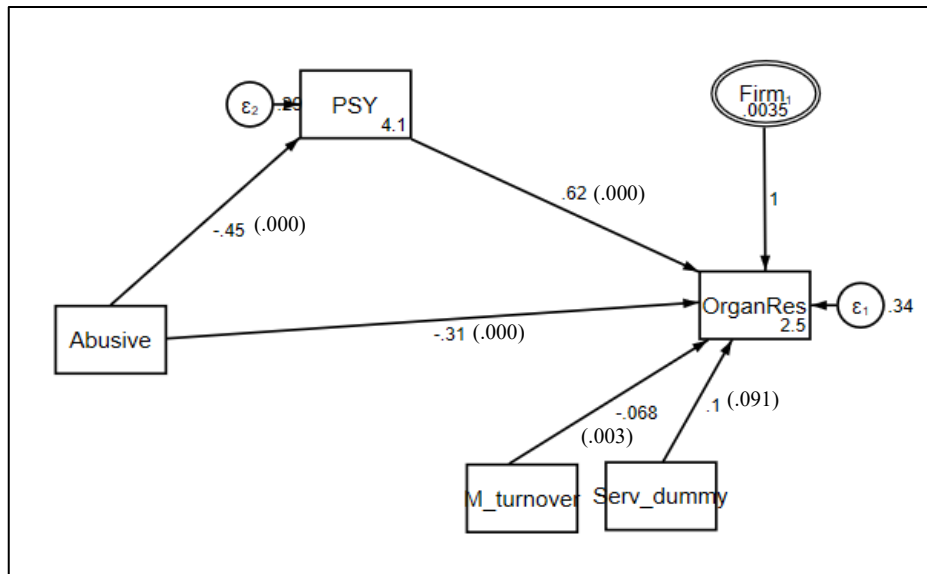


Figure 2: Mediation model

5. General Discussion

Organizational resilience is an important construct for study because it provides a measure of whether firms survive or thrive following a crisis. The present study is important because it was conducted in a novel macro crisis, in Africa and among SMEs. The purpose of the present study was to examine the relationship between abusive supervision and organizational resilience via employees' psychological capital. The model was fully supported. First, abusive supervision negatively relates to organizational resilience. As predicted by JD-R, this means that abusive supervision serves as a demand on organizational resilience. Second, abusive supervision negatively relates to employees' psychological capital also showing that abusive supervision is a demand on personal resources. Third, employees' psychological capital relates positively to organizational resilience, meaning psychological capital is a personal resource that contributes to organizational resilience. Last, employees' psychological capital mediated the relationship between abusive supervision and organizational resilience hence indicating the importance of individual level variables in contributing to organizational resilience. Previous research has only shown that abusive supervision deteriorates desirable organizational outcomes such as financial performance (Fischer *et al*, 2021), which is a narrow outcome measure. The present research has provided evidence for organizational resilience as an outcome, which has broad implications for organizational survival and reflects employee well-being. Previous research had shown that abusive supervision deteriorates psychological capital (Avey, Agarwal and Gill, 2021) which was confirmed in this study. No previous study has reported that employees' psychological capital boosts organizational resilience.

Moreover, most studies of these constructs in the present research have been conducted in large-scale companies, and primarily in North America and Europe. There is a growing appetite for studies conducted in Africa and in developing countries. The present study is unique because it brings out a different setting since the assessments of the study variables such as abusive supervision and psychological capital and how they predict different outcomes have been shown to differ across cultures (Wu and Nguyen, 2019).

This research makes an empirical contribution by examining the relationship between abusive supervision and organizational resilience via employees' psychological capital. This finding is a contribution to a field where empirical studies remain scarce regarding the mediating variables (Avey, Agarwal and Gill, 2021). The present study related abusive supervision and psychological capital as an individual level variables and organizational resilience as an organizational level variable reflecting a (1-1-2) multilevel model. Based on job-demands resources theory (JD-R), the present study built on the scant body of research on destructive leadership behaviors and their potential negative effects on organizational outcomes. Most importantly the present study

makes a theoretical contribution that employees' psychological capital can buffer the negative effects of abusive supervision on a firm's ability to be resilient. Although abusive supervision can erode psychological capital, it can be bolstered by other resources including support from family and friends (Luthans, Luthans and Avey, 2014).

The limitations of this study include potential common method variance from single source data. Future research could look at measuring organizational resilience using an independent measure. The present sample also focused on small and medium-sized enterprises, hence future studies can expand into other areas such as the public administration, large firms and nonprofits to comprehensively test leadership theory. Future research can utilize longitudinal research designs since abusive supervision, psychological capital and organizational resilience can vary.

Conclusively, this present study reveals the crucial role of employees' psychological capital in enhancing organizational resilience during crisis. Specifically, this present study makes a contribution on the role of employees' psychological capital in lessening the negative effects of abusive supervision on a firm's ability to be resilient. The present study implies that SMEs should be aware of the likelihood of abusive supervision during crises and take steps to reduce it. By doing so, employees' psychological capital can be increased leading to higher organizational resilience.

References

- Ahmad, J., Athar, M.R., Azam, R.I., Hamstra, M.R.W. and Hanif, M. (2019) 'A Resource Perspective on Abusive Supervision and Extra-Role Behaviors: The Role of Subordinates' Psychological Capital', *Journal of Leadership & Organizational Studies*, 26(1), pp. 73–86. Available at: <https://doi.org/10.1177/1548051818767391>.
- Annarelli, A. and Nonino, F. (2016) 'Strategic and operational management of organizational resilience: Current state of research and future directions', *Omega*, 62, pp. 1–18. Available at: <https://doi.org/10.1016/j.omega.2015.08.004>.
- Avey, J.B., Agarwal, U. and Gill, J.K. (2021) 'How does abusive supervision hurt employees? The role of positive psychological capital', *International Journal of Productivity and Performance Management*, ahead-of-print(ahead-of-print). Available at: <https://doi.org/10.1108/IJPPM-12-2019-0559>.
- Avey, J.B., Reichard, R.J., Luthans, F. and Mhatre, K.H. (2011) 'Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance', *Human Resource Development Quarterly*, 22(2), pp. 127–152. Available at: <https://doi.org/10.1002/hrdq.20070>.
- Bakker, A.B. and Demerouti, E. (2007) 'The Job Demands-Resources model: state of the art', *Journal of Managerial Psychology*, 22(3), pp. 309–328. Available at: <https://doi.org/10.1108/02683940710733115>.
- Bakker, A.B. and Schaufeli, W.B. (2008) 'Positive organizational behavior: engaged employees in flourishing organizations', *Journal of Organizational Behavior*, 29(2), pp. 147–154. Available at: <https://doi.org/10.1002/job.515>.
- Bhattacharjee, A. and Sarkar, A. (2022) 'Abusive supervision: a systematic literature review', *Management Review Quarterly* [Preprint]. Available at: <https://doi.org/10.1007/s11301-022-00291-8>.
- Biggs, D. (2020) 'Understanding Resilience in a Vulnerable Industry', *Ecology and Society*, p. 19.
- Crick, F., Eskander, S.M.S.U., Fankhauser, S. and Diop, M. (2018) 'How do African SMEs respond to climate risks? Evidence from Kenya and Senegal', *World Development*, 108, pp. 157–168. Available at: <https://doi.org/10.1016/j.worlddev.2018.03.015>.
- Demerouti, E., Bakker, A.B., Nachreiner, F. and Schaufeli, W.B. (2001) 'The job demands-resources model of burnout', *Journal of Applied Psychology*, 86(3), pp. 499–512. Available at: <https://doi.org/10.1037/0021-9010.86.3.499>.
- Duchek, S. (2020) 'Organizational resilience: a capability-based conceptualization', *Business Research*, 13(1), pp. 215–246. Available at: <https://doi.org/10.1007/s40685-019-0085-7>.
- Fang, Y.-C., Chen, J.-Y., Wang, M.-J. and Chen, C.-Y. (2019) 'The Impact of Inclusive Leadership on Employees' Innovative Behaviors: The Mediation of Psychological Capital', *Frontiers in Psychology*, 10. Available at: <https://doi.org/10.3389/fpsyg.2019.01803>.
- Fischer, T., Tian, A.W., Lee, A. and Hughes, D.J. (2021) 'Abusive supervision: A systematic review and fundamental rethink', *The Leadership Quarterly*, 32(6), p. 101540. Available at: <https://doi.org/10.1016/j.leaqua.2021.101540>.
- Gerhart, B., Wright, P.M., Mc Mahan, G.C. and Snell, S.A. (2000) 'Measurement Error in Research on Human Resources and Firm Performance: How Much Error is There and How Does it Influence Effect Size Estimates?', *Personnel Psychology*, 53(4), pp. 803–834. Available at: <https://doi.org/10.1111/j.1744-6570.2000.tb02418.x>.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011) 'PLS-SEM: Indeed a Silver Bullet', *Journal of Marketing Theory and Practice*, 19(2), pp. 139–152. Available at: <https://doi.org/10.2753/MTP1069-6679190202>.
- Hillmann, J. and Guenther, E. (2021) 'Organizational Resilience: A Valuable Construct for Management Research?', *International Journal of Management Reviews - Wiley Online Library*, 23(1), pp. 7–44.
- Hobfoll, S.E. (2002) 'Social and Psychological Resources and Adaptation', *Review of General Psychology*, 6(4), pp. 307–324. Available at: <https://doi.org/10.1037/1089-2680.6.4.307>.
- Jalil, M.F., Ali, A., Ahmed, Z. and Kamarulzaman, R. (2021) 'The Mediating Effect of Coping Strategies Between Psychological Capital and Small Tourism Organization Resilience: Insights From the COVID-19 Pandemic, Malaysia', *Frontiers in Psychology*, 12, p. 766528. Available at: <https://doi.org/10.3389/fpsyg.2021.766528>.

- Keashly, L. (1998) 'Emotional abuse in the workplace: Conceptual and empirical issues.', *Journal of Emotional Abuse*, 1, pp. 85–99.
- Kenya National Bureau of Statistics (2016) *Micro, small and medium establishment (MSME) survey basic report*.
- Laschinger, H.K.S. and Fida, R. (2014) 'New nurses burnout and workplace wellbeing: The influence of authentic leadership and psychological capital', *Burnout Research*, 1(1), pp. 19–28. Available at: <https://doi.org/10.1016/j.burn.2014.03.002>.
- Lengnick-Hall, C.A., Beck, T.E. and Lengnick-Hall, M.L. (2011) 'Developing a capacity for organizational resilience through strategic human resource management', *Human Resource Management Review*, 21(3), pp. 243–255. Available at: <https://doi.org/10.1016/j.hrmr.2010.07.001>.
- Liao, S., Hu, D., Chung, Y.-C. and Chen, L.-W. (2017) 'LMX and employee satisfaction: mediating effect of psychological capital', *Leadership & Organization Development Journal*, 38(3), pp. 433–449. Available at: <https://doi.org/10.1108/LODJ-12-2015-0275>.
- Lupşa, D., Vîrğa, D., Maricuţoiu, L.P. and Rusu, A. (2020) 'Increasing Psychological Capital: A Pre-Registered Meta-Analysis of Controlled Interventions', *Applied Psychology*, 69(4), pp. 1506–1556. Available at: <https://doi.org/10.1111/apps.12219>.
- Luthans, B.C., Luthans, K.W. and Avey, J.B. (2014) 'Building the Leaders of Tomorrow: The Development of Academic Psychological Capital', *Journal of Leadership & Organizational Studies*, 21(2), pp. 191–199. Available at: <https://doi.org/10.1177/1548051813517003>.
- Luthans, F., Youssef, C.M. and Avolio, B.J. (2007) *Psychological capital: developing the human competitive edge*. Oxford ; New York: Oxford University Press.
- McMurray, A.J., Pirola-Merlo, A., Sarros, J.C. and Islam, M.M. (2010) 'Leadership, climate, psychological capital, commitment, and wellbeing in a non-profit organization', *Leadership & Organization Development Journal*, 31(5), pp. 436–457. Available at: <https://doi.org/10.1108/01437731011056452>.
- Mustafa, M.J. and Hughes, M. (2018) 'The Kenyan Environment's Influence on the Emergence and Development of Corporate Entrepreneurship Among SMEs', in L.-P. Dana, V. Ratten, and B.Q. Honyenuga (eds) *African Entrepreneurship*. Cham: Springer International Publishing, pp. 59–88. Available at: https://doi.org/10.1007/978-3-319-73700-3_4.
- Osano, H.M. (2019) 'Global expansion of SMEs: role of global market strategy for Kenyan SMEs', *Journal of Innovation and Entrepreneurship*, 8(1), p. 13. Available at: <https://doi.org/10.1186/s13731-019-0109-8>.
- Pitichat, T., Reichard, R.J., Kea-Edwards, A., Middleton, E. and Norman, S.M. (2018) 'Psychological Capital for Leader Development', *Journal of Leadership & Organizational Studies*, 25(1), pp. 47–62. Available at: <https://doi.org/10.1177/1548051817719232>.
- Pituch, K.A. and Stevens, J.P. (2015) *Applied Multivariate Statistics for the Social Sciences: Analyses with SAS and IBM's SPSS, Sixth Edition*. Routledge.
- Prayag, G., Spector, S., Orchiston, C. and Chowdhury, M. (2020) 'Psychological resilience, organizational resilience and life satisfaction in tourism firms: insights from the Canterbury earthquakes', *Current Issues in Tourism*, 23(10), pp. 1216–1233. Available at: <https://doi.org/10.1080/13683500.2019.1607832>.
- Ruiz-Martin, C., Lopez-Paredes, A. and Wainer, G. (2018) 'What we know and do not know about organizational resilience', *International Journal of Production Management and Engineering*, 6(1), p. 11. Available at: <https://doi.org/10.4995/ijpme.2018.7898>.
- Salwan, P. and Gada, V.P. (2018) 'Antecedents of Resilience: an Investigation into Bharat Forge', *Indian Journal of Industrial Relations*, 53(3), pp. 449–461.
- Sullivan-Taylor, B. and Branicki, L. (2011) 'Creating resilient SMEs: why one size might not fit all', *International Journal of Production Research*, 49(18), pp. 5565–5579. Available at: <https://doi.org/10.1080/00207543.2011.563837>.
- Teo, W.L., Lee, M. and Lim, W.-S. (2017) 'The relational activation of resilience model: How leadership activates resilience in an organizational crisis', *Journal of Contingencies and Crisis Management*, 25(3), pp. 136–147. Available at: <https://doi.org/10.1111/1468-5973.12179>.
- Tepper, B.J. (2000) 'Consequences of Abusive Supervision', *Academy of Management Journal*, 43(2), pp. 178–190. Available at: <https://doi.org/10.5465/1556375>.
- Tepper, B.J., Moss, S.E., Lockhart, D.E. and Carr, J.C. (2007) 'Abusive Supervision, Upward Maintenance Communication, and Subordinates' Psychological Distress', *Academy of Management Journal*, p. 13.
- Tepper, B.J., Simon, L. and Park, H.M. (2017) 'Abusive Supervision', *Annual Review of Organizational Psychology and Organizational Behavior*, 4(1), pp. 123–152. Available at: <https://doi.org/10.1146/annurev-orgpsych-041015-062539>.
- Tucci, J. and Clouse, W. (2005) 'The Entrepreneurial Executive', 10, p. 116.
- Tummers, L.G. and Bakker, A.B. (2021) 'Leadership and Job Demands-Resources Theory: A Systematic Review', *Frontiers in Psychology*, 12. Available at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.722080> (Accessed: 21 September 2023).
- Vilarinho del Castillo, D. and Lopez-Zafra, E. (2022) 'Antecedents of psychological Capital at Work: A Systematic Review of Moderator–mediator Effects and a New Integrative Proposal', *European Management Review*, 19(1), pp. 154–169. Available at: <https://doi.org/10.1111/emre.12460>.
- Voorhees, C.M., Brady, M.K., Calantone, R. and Ramirez, E. (2016) 'Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies', *Journal of the Academy of Marketing Science*, 44(1), pp. 119–134. Available at: <https://doi.org/10.1007/s11747-015-0455-4>.

- Whitman, Z., Kachali, H., Roger, D., Vargo, J. and Seville, E. (2013) 'Short-form version of the Benchmark Resilience Tool (BRT-53)', *Measuring Business Excellence*, 17. Available at: <https://doi.org/10.1108/MBE-05-2012-0030>.
- Wu, W.-Y. and Nguyen, K.-V.H. (2019) 'The antecedents and consequences of psychological capital: a meta-analytic approach', *Leadership & Organization Development Journal*, 40(4), pp. 435–456. Available at: <https://doi.org/10.1108/LODJ-06-2018-0233>.
- Zighan, S., Abualqumboz, M., Dwaikat, N. and Alkalha, Z. (2022) 'The role of entrepreneurial orientation in developing SMEs resilience capabilities throughout COVID-19', *The International Journal of Entrepreneurship and Innovation*, 23(4), pp. 227–239. Available at: <https://doi.org/10.1177/14657503211046849>.

Leadership in a Private Higher Education Institution in Mexico: A Case Study of Tecnológico de Monterrey (Sonora Norte Campus)

Elsa Catalina Olivas Castellanos¹, Leonel De Gunther Delgado², Eduardo Rodríguez Álvarez¹, César Díaz Maldonado¹ and Elisa Anaette Figueroa Islas²

¹Tecnológico de Monterrey, Hermosillo, Mexico

²Universidad de Sonora, Hermosillo, Mexico

cat.olivas@tec.mx

leonel.degunther@unison.mx

eduardo.rodrigueza@tec.mx

cesdiamal@gmail.com

contact.elisafigueroa@gmail.com

Abstract: Leadership for the new digital era and the 4.0 industry comes with some challenges for organizations across the board; and, in the education field, for institutions and educators alike. Understanding the need to transform and innovate processes is necessary to offer high-quality programs to students and competitive opportunities to educators. In Higher Education (HE) institutions, it is of great urgency to assign and distribute such leadership skills and tasks to educators and students, to provide and ease specific tasks at hand, and to encourage collaborators in the development of leadership skills for the classroom and to promote lifelong leadership skills for students too. In Mexico, the HE system looks to include new ways to innovate, collaborate and even compete with other national and foreign institutions for the most qualified human capital. *Tecnológico de Monterrey*, a private institution, is not only one of the top-ranking universities in Mexico, but it also has a strong emphasis on leadership development for its students and collaborators. The case of Sonora Norte Campus is a successful one, its empowerment approach toward building, nurturing, and developing quality leaders. A qualitative study was conducted to identify the practices of the institution and the leadership practices in the institution's different schools. We conducted semi-structured interviews with leaders and collaborators which resulted in understanding the leadership dynamics on the campus, the different styles of leadership among its collaborators as well as some of the challenges they face. This study provides a look into the leadership in a private HE institution, and some of its successful practices. This study proves to be relevant for other heads of HE institutions in the world (and in other *Tecnológico de Monterrey* campuses nationwide) interested in adding and researching effective leadership practices to their agendas.

Keywords: High school, Higher education, Educational innovation, Tec 21 Educative Model, Leadership

1. Introduction

Currently, institutions looking to transform their organizations, to adhere to the 4.0 and 5.0 industries. At the head of these establishments, there is an administrative approach to operating the institution. As suggested by the United Nations Educational, Scientific and Cultural Organization (UNESCO), effective leadership in the educational sector is essential to achieve several target goals, such as Goal 4: Quality Education, of the 17 Sustainable Development Goals (SDG) proposed by the United Nations (UN), proper organization of the institution, and adherence to international and national standards, among other outcomes.

Leadership in such institutions should be met to act by organizational and ethical principles. Within Higher Education (HE) establishments, there are different types of leadership and practices at hand, that can deliver the results in a timely and effective manner. However, these practices can become issues if proper leadership is not addressed; most importantly, when a change or an innovation is required, "change leaders are (...) responsible to make their followers put extra effort toward the implementation of change. What is more, they are expected to develop a sense of satisfaction and are perceived as effective in their leadership by their followers" (Mamo Gebretsadik et al., 2022, p. 10).

Leadership practices in HE institutions provide an outlook for effective organizational performance, from the leaders of each school or department to the educators and collaborators in their teams, to the expected outcome of the students. Leadership practices that welcome change, provide distributed leadership within their teams, and promote collaborative work can further an establishment's growth and quality, of their education and of their performance.

2. Theoretical Framework

As before mentioned, the current education scenario demands efficient leadership that can face challenges and transformations. Organizations such as UNESCO have suggested the need for Higher Education (HE) institutions

to aspire for sustainable leadership in their organizations. Hargreaves & Fink (2004) have noted that this type of leadership:

“Is a shared responsibility, that does not deplete human or financial resources, and that cares for and avoids exerting negative damage on the surrounding educational and community environment. Sustainable leadership has an activist engagement with the forces that affect it and builds an educational environment of organizational diversity that promotes cross-fertilization of good ideas and successful practices in communities of shared learning and development” (p.3).

This HE leadership focuses on the multicultural unification of values to select and combine the elements that can provide more suitable results. The concept of a leader varies depending on each culture, and so, the encouragement that a leadership style will differ as well. Van Norren & Beehner (2021) have noted that UNESCO comprises several competencies for sustainable leadership, which are: systems thinking, anticipatory, normative, strategic action, (emphatic) collaboration, critical thinking, self-awareness, and integrated problem-solving.

Leaders in universities, across the different schools and departments, influence the outcome of their collaborators and their team members which, in return, can lead to quality research and pedagogical developments by their educators, as well as positive student performance and retention rates. These leaders understand the high stakes their position entails, thus they practice collaborative and effective leadership by providing motivation and having constant communication with their team and the other school leaders of the institution.

To Toker (2022), “leaders inside institutions and universities play an essential role in displaying influence to increase organizational performance, besides, the style of leadership is also a great factor for the success of the educational system” (p. 233). This is an exercise of power, or control, that promotes positive attitudes among team members to achieve a common goal. Also, universities must prepare for continuous change and adaptability to new trends in education, through effective leadership that promotes an organizational culture and positive leadership practices (Egitim, 2022).

2.1 Higher Education Institutions in Mexico

Effective leadership in HE institutions in Mexico is key for such establishments to thrive as competitive organizations in the country, as well as high-ranking establishments recognized around the world. In an organization, such as an educational one, the decision-making process should be shared, reviewed, and, if necessary, transformed to achieve the expected outcomes for its collaborators, professors, and, most, its students. In large-scale institutions, such as the *Tecnológico de Monterrey* and its twenty-six campuses throughout the country, these decisions should work with coordinators, directors, and immediate leaders on each campus.

Acosta Ochoa & Buendía Espinosa (2016) have pointed out that HE establishments in the country must be capable of identifying their ties to other organizations, and to the communities they belong to as well, to create the necessary structures and to provide the proper skills that industries need for today’s ever-changing global market. Nonetheless, limited turnarounds, improper leadership dynamics or practices, and lack of efficient communication between the stakeholders within the institution, among other aspects, can lead to poor performance from both leaders and their immediate team members.

Higher Education (HE) institutions in Mexico face statutes and norms that regulate their operations by the federal government, such as public policies placed by the *Secretaría de Educación Pública* (SEP). But, private universities have more autonomy in their administration and management, but they still adhere to the achievement of the same outcomes: quality education and effective organizational performance (Acosta Ochoa & Buendía Espinosa, 2016).

Gatica et al. (2019) also note that Mexican universities see effective leadership as a source of success as an institution, as a top-ranking establishment recognized by other prestigious universities (national and international), as well as educators and students. Its success lies in the development of its employees’ leadership skills to manage the different schools and their collaborators alike. The author adds that universities in the country must have the adequate tools to transform their organization, include, or become, an international institution by improving its leadership practices, dynamics, and commitment to the expected outcomes.

In Mexico, the different schools within universities are led by professors who, with time, can get and develop leadership practices that suit their expected outcomes. If executed and by encouraging effective leadership

practices, these academic leaders can be able to manage knowledge and development, and at times innovate in their area of expertise.

2.2 The Concept of Practice in a Social Structure (HE Institution)

Higher Education establishments share a set of statutes, goals, attitudes, and behaviors, among other aspects; thus, creating a sort of 'microcosmos', or rather a social space, that expects its employees to commit to the organization, or cultural, 'rules'. To belong to this space, the stakeholders at hand (the employees) must adopt, and adhere to, these rules. HE leaders that look out for their institutions' performance, and ranking, understand that their approach to their immediate staff (in this case, educators, and staff alike) must be welcoming, inclusive of change, but effective.

In this pursuit of effective leadership, the different leaders within the institution, oftentimes, may compete for power, control, or hierarchy. This competitiveness is part of the establishment or field of Higher Education, whether it is recognized by themselves or from the outside in; this power struggle can 'determine' the interests of the social space. Bourdieu (1976, 1977, 2001) describes in his practice theory, that such actions by the individual leaders can be understood by their intentions of "becoming or staying current [in the field]" (p.115).

This study incorporated Bourdieu's concepts of a social structure, the institution, to comprehend the field where the leaders stand (each school the institution holds), their practices (habitus) as heads, and, the set of strategies, networks, and personal trajectory within the institution (capital). These three components were able to provide an understanding of the leadership practices at a Higher Education institution.

3. Empirical Study Design

Our qualitative study, with an exploratory approach, focused on understanding the practices of leaders at a Higher Education institution in the northwestern region of Mexico. This meant comprehending the structure of their 'field' (their school or department), their dynamics as leaders, and their knowledge, or capital, about their area of expertise (Bourdieu, 1976; 1977). We conducted the study in a private Higher Education institution (*Tecnologico de Monterrey*) in the northwestern region of Mexico, in Hermosillo City in the State of Sonora, during the 2023-1 semester.

To provide context for the institution, *Tecnologico de Monterrey* based on a national model, ranks as one of the top leading universities in the country. The university is governed by an Assembly of Associates. This assembly consists of several vital actors and stakeholders such as national entities, professors, and experts of the institution within. Also, to the assembly, various boards protect and aid private institutions. The following are some of them: board of directors, board of trustees, advocacy councils and committees, local boards of trustees, and extra boards and committees. All the entities mentioned aim to provide quality education in the organization.

In this study, we focused our attention on the Sonora Norte campus of the *Tecnologico de Monterrey*, which belongs to the Western Region of the institution. The campus has seven schools and one Academic Services Department. The schools are the following: Prepa Tec (High School); LIFE (leadership and student development); the School of Architecture, Art, and Design (EAAD); the School of Humanities (EHE); the School of Engineering and Sciences (EIC); the School of Business (EN) and the School of Economics, Law, International Relations and Government and Public Transformation (ECSG).

In recent years, the campus has seen a growth in student enrollment (both in undergraduate programs and its High School program). This has helped the expansion of the facility of the campus: an Innovation Center will begin construction in the upcoming months, high-end sports facilities were recently completed and the proposal for an added building for the High School is in the works.

For our study, we invited the leaders of each school and of the Academic Services Department, from the Sonora Norte campus, to take part in a semi-structured interview. This invitation was requested by way of their institutional email, where they were informed of the duration of the interview (approximately thirty minutes) and the study's goal; they were made aware that their participation was voluntary, and that their identities would remain anonymous, following the ethical guidelines of the institution. Of the eight participants invited, only five volunteered. The participants that agreed were from different schools and departments at the time of the study; their school is not disclosed to protect their identities.

One of the authors conducted the interviews with all the participants and recorded the video and the audio of each conversation that was held via Zoom digital platform (this was due to time constraints the participants had). We collected more than three hours of recordings, which allowed us to conduct this exploratory study.

Our initial purpose was to have all the leaders from the schools at the campus take part, but, three leaders from different schools were unable to take part now in the study, due to conflicting schedules; nonetheless, they agreed to be interviewed at a later moment during the 2023-2 semester. The interviews were guided by concepts from Bourdieu's practice theory (1976, 1977), which encompasses the concepts of field, *habitus*, and capital. With this in mind, we created and validated a script for the interviews, based on dimensions, categories, and subcategories created by Bourdieu, with experts in the field of Social Sciences (see Table 1). We included another dimension to the script, based on Tejada's (1998) innovation theory, to explore their conception of innovation and to identify if they perceived their leadership as innovative.

Table 1: Dimension and categories of the semi-structured interview guide for participants about their practices as leaders in their school at the Tecnológico de Monterrey, based on Bourdieu's practice theory (field, habitus, capital)

Dimension	Category	Subcategory	Questions
Field	Structure of the field of their school	Rules of the discipline	How is work done in your discipline? (Is it coordinated, do people perform their tasks individually?)
		Tensions	Does this way of performing one's work generate tensions among other people in the discipline?
		Knowledge monopoly, prestige, and position in the organization	Do you enjoy prestige in your discipline, school, and the local community? How, or by way of whom, did you first begin your career in the institution?
		Interests, shared values (history)	What is the linkage between your school, or discipline, with the local community?
Habitus	Perception of the discipline and socialization of procedures	Forms of leadership practices according to the school and ways of appropriation of leadership practices	How are your normal workdays? What do you do or what strategies do you implement to perform your leadership role? What is the most complicated part of your role as a leader in your school? What is the most rewarding and the least rewarding part of working in this institution?
Capital	Economic Capital	Projects, funding, networks or groups, trajectory, experience acquisition, knowledge, and leadership strategies.	What strategies do you use to gain funding in your discipline or school? What conditions your leadership in your discipline or school?

Dimension	Category	Subcategory	Questions
	Social Capital	Networks, academic bodies, and research groups.	Do you belong to national or international networks or groups?
	Cultural Capital	Incorporated: formative trajectories. Learning the rules, acquisition	How and when did you begin your leadership role in the institution?
		Objective: academic production: books, articles, cv, etcetera. Material support: financed projects, and initiatives	Literature research and institutional reports and statutes.
		Institutionalized: diplomas, titles, recognition (cv), etcetera	How important is the Higher Education institution where one studies?
Innovation	Innovation	Processes of continuous improvement to identify useful changes for the discipline (Tejada, et al., 2019).	What is innovation? and how important is it for you? How do you consider that you are innovating in your leadership role in your discipline?

Once we conducted the interviews, we organized the information recovered from the conversations with the aid of one of the authors, we coded the information, provided an identifier to each participant (1, 2, 3, 4, and 5), and proceeded to review the coded interviews. While organizing the information from the interviews, we gathered more data from the participants through the institutional platform Mitec (see Table 2), such as years in the institution, years in their current leadership position, and the size of their team (we must note that in some cases, their team was a national team made up of members from different campuses but had also collaborators in their campus that they were in charge of).

Table 2: Participants Profile

Participant	Gender	Seniority in the organization	Seniority organizational Leadership	Collaborators in charge of the Sonora Norte campus	Size of team
1	Male	2013	2021	7	66
2	Male	2013	2021	14	14
3	Male	2014	2017	18	18
4	Female	2014	2020	77	77
5	Female	2002	2017	6	109

The duration of the interviews ranged from twenty-seven to forty-four minutes. There were two female participants and three males; despite this, all the leadership roles in the institutions' seven schools and one Academic Services Department are distributed in gender (four are led by women and the other four by men).

The participants were able to share during the interviews their leadership journeys, their development, and growth within the HE institutions as well as reflect on the positive outcomes they have experienced in their current roles, which were positive. All the audio recordings were reviewed and ensured that the answers provided during the interviews remain anonymous (some characteristics of the leaders were left out, as well as the names of the participating schools in the study). The driving question of the study: what are the practices of the leaders in a private Higher Education (HE) institution? Provided us with a guide to further analyze their dynamics as leaders in their schools, and to identify their perception of innovation in their leadership.

Some limits of the study, as expected, were about the depth of the answers from the participants. We understood that having an administrative position as the one they had at the time of the study, could limit their answers. The interviewer who conducted all the semi-structured interviews had more familiarity with the participants and was able to establish a proper rapport; nonetheless, most of them kept answers short without delving into specifics, which can result in biases due to their institutional position at the time of the study.

4. Results and Discussion

Our exploratory approach provided us with an understanding of the practices of leadership in the different schools and departments of the Sonora Norte campus at *Tecnologico de Monterrey*, in the northwestern region of Mexico. There is a shared understanding among the participants that their leadership practices are aligned with the national and regional areas of the institution, and that their practices promote collaboration and communication, which they attribute as keys to their success as leaders in their schools. When referring to innovation, all the participants, except one, believed that they were innovating in their leadership in their discipline or school.

All the participants shared that the work in their school, or department, was coordinated through constant communication among the collaborators on campus. They made emphasis on the fact that they understood the common goals that the national coordination shared, but they were flexible in reaching them by providing freedom on how to achieve them. They viewed their work as a collaborative effort between their leadership, and their team, and all the participants acknowledge the amount of freedom their team must achieve tasks at hand, without micromanaging them. The consensus among the participants reflects a sense of understanding their teams and trusting them with reaching the goals needed in their schools.

About tensions due to their leadership in their discipline or school, they mentioned that the tension, or conflict, comes from the stress generated by the amount of work they have, but not by the work environment. Other comments from two participants had to do with the size of their school on the campus and the limited budgets they had to work with. In their case, their in-campus team was small, which meant that they had to have two or three administrative roles at the same time, also to their teaching activities. These participants also noted that they had to be strategic when referring to their school's budget; since they did not have the same amount of budget to execute their school's activities and events. One participant mentioned the following:

"No, there aren't tensions between the collaborators in [my school or department], but what does stand out is the stress due to the [fast-paced] rhythms and the high amount of work there need to be executed in short periods".

The participants recognized that their contributions as leaders in the institution had been acknowledged by their peers, which can be translated as them performing effective leadership practices. This can confirm that some leadership practices can be obtained by experience or by reproduction (Bourdieu, 1977); this experience can be attributed, in the case of the participants, to their institutional antiquity and their understanding of the goals that their school and institution need. We must note that the antiquity of the participants in their current leadership role was less than six years old, but their antiquity in the institution ranged from nine to twenty-one years. Also, some of them mentioned that they had previous leadership roles in the campus, that led them to the position they have today.

Participants shared that their workload meant that, in some instances, they stay overtime, or they continue working in their homes. Yet all mentioned that some periods during the year, or semester, are more hectic than others. They mentioned that by having a clear understanding of what they need to achieve, meeting up (weekly)

with their teams, and having constant communication among them and with other schools on the campus, they can reach those expected outcomes.

Participants commented that they believed they were innovating in their leadership by implementing new initiatives in and outside of the institution, with their communities and regions. Only one participant mentioned that his school or department did not have a direct linkage with a social initiative. As mentioned previously, all the participants agreed that their leadership was innovative except one participant; this participant acknowledged that their school or department has events, actions, and processes that motivate and that are different from others, not new, but that due to the fast-paced environment was not able to innovate through their leadership as the participant would like to. They mention that innovation has a reflection process that, in their case, was not possible to do now of the study.

5. Conclusions

In this paper, we aimed to explore the leadership practices in a Higher Education (HE) institution, *Tecnologico de Monterrey*, Sonora Norte campus. In education, leadership practices determine institutional success; this can be determined by the amount of student retention, performance, and graduation rate. Throughout our interviews, the interviewees mentioned how their experience improved when prioritizing different tasks, adapting to changing surroundings, and identifying areas for growth.

The results state that an influential leader embraces change, and guides others toward professional growth. By persuading others to work towards a shared goal as a team, leadership promotes a space for sharing ideas and opinions and encourages a culture where individuals feel valued and motivated to cultivate themselves. It is crucial to study leadership to nurture future leaders and develop skills that foster them. It is imperative to expand this study to other campus leaders and the public HE sectors as well. Thus, a broader understanding of leadership practices can be acquired.

Declaration of interest

This is to acknowledge that the authors report there are no competing interests to declare.

Acknowledgments

We want to acknowledge the technical and financial support of the Writing Lab, Institute for the Future of Education, Tecnológico de Monterrey, Mexico, in the production of this work. We also acknowledge the support of the Centro de Desarrollo Docente e Innovación Educativa (CEDDIE) at Tecnológico de Monterrey, Sonora Norte Campus, and Lucia Guadalupe Canseco Campoy's leadership in the institution.

References

- Acosta Ochoa, A., & Buendía Espinosa, A. (2016). Perspectivas institucionales y educación superior desde miradas globales a espacios locales: el caso de México. *Revista de la Educación Superior*, 45(179), 9-23. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S0185276016300395>
- Bourdieu, P. (1976). *Sociology in question* (R. Nice, Trans.). Sage.
- Bourdieu, P. (1977). *Outline of a Theory of Practice*. Cambridge: Cambridge University Press. Retrieved from: <https://0-eds-a-ebscohost-com.biblioteca-ils.tec.mx/eds/ebookviewer/ebook/ZTAwMHh3d19fNTg5MTc1X19BTg2?sid=8fd42bad-df98-40cb-b72d-b9fae44ef411@sessionmgr4006&vid=0&format=EB&rid=1>
- Bourdieu, P. (2001). *El oficio de científico: ciencia de la ciencia y reflexividad: curso del Collège de France 2000-2001*. Barcelona: Anagrama.
- Egitim, S. (2022). Challenges of adapting to organizational culture: Internationalization through inclusive leadership and mutuality. *Social Sciences & Humanities Open*. Vol. 5, Issues 1. <https://doi.org/10.1016/j.ssaho.2021.100242>
- Gatica, L., Cruz, E., Luis, K., García, P., Vargas, R., Hernández, J., Rodríguez, I., & Tepal, I. (2019). Liderazgo Docente en las Universidades Públicas de México. *Revista Iberoamericana de Ciencias*, 6(5), 2-12. Retrieved from: <http://www.reibci.org/publicados/2019/dic/3800101.pdf>
- Hargreaves, A., & Fink, D. (2004). The seven principles of sustainable leadership. *Educational leadership*, 61(7), 8-13.
- Jameson, J., Rumyantseva, N. L., Cai, M., Markowski, M., Essex, R., & McNay, I. (2022). A systematic review and framework for digital leadership research maturity in higher education. *Computers and education open*, 3, 100115. <https://doi.org/10.1016/j.caeo.2022.100115>
- Mamo Gebretsadiq, D. (2022). An Exploration of Change Leadership at Public Higher Education Institutions in Ethiopia. *SAGE Open*, 12(2). <https://doi.org/10.1177/21582440221091256>
- Tejada Fernández, J. (1998). *Los agentes de la innovación en los centros educativos*. Aljibe.
- Toker, A. (2022). Importance of leadership in higher education. *International Journal of Social Sciences and educational studies*. Vol. 9, No. 2. DOI: [10.23918/ijsses.v9i2p230](https://doi.org/10.23918/ijsses.v9i2p230)

- Unesco. (2023). *Leadership and Education. Global Education Monitor Report*. UNESCO. Retrieved from: <https://www.unesco.org/gem-report/en/leadership>
- van Norren, D., & Beehner, C. (2021). Sustainability leadership, UNESCO competencies for SDGs, and diverse leadership models. *International Journal of Development and Sustainability*. Retrieved from: <https://isdsnet.com/ijds-v10n1-03.pdf>

From Academic Design Science Research to Start-up: Building a Digital Platform Ecosystem to Promote a Sustainable Knowledge Co-Creating Community

Ulrich Schmitt

Business School, University of Stellenbosch, Bellville, South Africa

schmitt@knowcations.org

Abstract: As the new digital era is accompanied by accelerating change, people as well as institutions need to adapt and transform. Crucial for their success is how well leaders can cultivate the absorption and sharing of knowledge as a resource and its integration into the organisational endeavours. Innovative system designs may prove vital to providing crucial support. Based on a prior academic design science research project and published outputs, a recently established start-up aims to create a digital community platform for knowledge co-creation to serve members with diverse ambitions and potentials in their personal and collaborative contexts. The digital platform ecosystem follows a novel knowledge management approach by favouring personalization, mobility, generativity, and entropy reduction. How to sustainably address the inherent system complexities and scaling needs in an entrepreneurial environment known for short iterative cycles of minimum viable developments have proven to be an expected challenge, closely followed by the limited power of academic detail and lingo to create enthusiasm in start-up spaces where attention slots are measured in pitch decks and elevator rides. This paper looks at this particular case and at the lessons learnt in the transition phase from academia to a business incubation space and, hence, aims to contribute to the discourse between scholars, practitioners, and clients on how digital entrepreneurship and innovation spaces may be best served for mutual benefit.

Keywords: Knowledge creation, Digital platform ecosystem, Digital transformation, Knowledge management system, Entrepreneurship, Innovation, Design science research, Sustainable Development, Tech for good

1. From Academic Entrepreneurship to Incubating Start-up

With the new generation of Sustainable Development Goals (SDG), the urgency for technological and educational interventions to combat opportunity divides has been further raised. As part of a broader goal on infrastructure, industrialization, and innovation, the SDGs commit to “significantly increase access to ICTs and strive to provide universal and affordable access to the internet.” Given the advanced levels of mobile coverage, internet accessibility has been a logical focus. But “while digital technologies have been spreading, digital dividends have not. [...] Technology can make workers more productive, but not when they lack the know-how to use it” (World Bank Group, 2016, p.2,4).

Over the last years, an academic project following design science research (DSR) methodologies (Hevner *et al.*, 2004; Baskerville *et al.*, 2018; Baskerville and Pries-Heje, 2019), conceptual analysis, and prototyping has been aiming for a novel and effective¹ decentralized Knowledge Management (KM) concept and application. It favours personalized, generative, negentropic and community-based KM approaches (to be referred to as Personal KM System (PKMS)) allowing for a fruitful co-evolution with traditional institutional solutions. The most recent publications focused on digital threats and sustainability, prospective affordances and ecosystems, generative capacities, sustainability, visioning, and compliance with the ISO 30401:2018-KMS Standard (Schmitt, 2021a, 2022b). The 2022 transition from an academic DSR project to a Mauritian start-up business venture has, hence, just been a further logical step towards system realization (Schmitt, 2022a).

As academic entrepreneurship is a young research area with recently growing interest (Secundo, Rippa and Cerchione, 2020). With its focus on the transitional (academic to start-up) and incipient stage (leading to growth and maturity stages), this paper aims to contribute to the body of design knowledge on entrepreneurship and innovation management and to assist other researchers and practitioners facing similar circumstances and/or start-up opportunities.

The paper is structured as follows: After briefly presenting selected basic KM science notions and prior DSR work (2.1), the relevance as a Tech-for-Good solution in the context of the Sustainable Development Goals (2.2) as

¹A design artefact is complete and effective (utility) when it satisfies the requirements and constraints (functionality) of the problem it was meant to solve (performance). Its quality and efficacy must be rigorously demonstrated via well-executed evaluation methods. Good designs embody a style that is aesthetically pleasing (elegance) to both the designer and the user (usability) and that fits with the technical infrastructure of its environment (consistency, accuracy, reliability). Design evaluation includes observational, analytical, experimental, and testing methods (Hevner *et al.*, 2004; Schmitt, 2016).

well as encountered synergies between scientific rigor, design science, and entrepreneurial practice are discussed (2.3). Section 3 focuses on the challenges faced which include ‘informing gaps’ of academic publications for start-up-stakeholders’ consumption (3.1) and the need for harmonizing short-term start-up considerations with more holistic, scalable, and/or sustainable aspirations (3.2), to be followed by a look at the road ahead (4).

2. From (P)KMS to Digital Platform for Knowledge Co-Creation

2.1 Organizational KMS Versus Personal KMS

Having diagnosed current Knowledge Management (KM) as too collectivized and balkanized among many competing ontologies and centralized services, Levy (Levy, 2011) envisages a ‘decentralizing KM Revolution’ that “gives more power and autonomy to individuals and self-organized groups” where autonomous Personal KM (PKM) capacities engaged in creative conversations are furnishing an emergent level of collective intelligence and social KM, which in turn feed them. Levy’s scenario fits Wiig’s (Wiig, 2011) assertion that the viability of enterprises and societies results from the organizational and departmental aggregation of innumerable small ‘nano’ actions by individuals.

Prioritizing this personal angle has been confirmed by a meta-study which identifies the strongest association between innovation and creativity at the individual (and not at the team) level. Larger firms might be better at leveraging their creativity investments (idea implementation and exploitation) assumed to be due to more resource endowments, experience, and better complementary capabilities, but the facilitating potential of knowledgeable entrepreneurs and leaders applies anywhere. Hence, organizations ought to “identify, nurture, and effectively deploy” talents able to equally exploit and explore ideas and to “consider them for participating in innovation teams” (Sarooghi, Libaers and Burkemper, 2015).

With a focus on small and medium enterprises (SMEs), a KM/KMS study surveyed the commercial KM market. The evaluation was based on fifteen feature classes² (derived from the 34 KM tools’ scope and publications). The leading four tools merely covered between 53% and 60% of them, showing that “commercial KM tools just like most scientific findings unveil a certain concentration on search, data mining, filtering and collaboration features”; they “still seem to focus on rigid, more workflow or groupware-based interpretations of KM tooling”. All tools reviewed, for example, neglect “a method or concept to build and establish a knowledge sharing culture” and – in terms of the needs of SMEs - are “far from being mature in terms of research as well as market offering.” The authors concur that “today’s KM tools seem to be understood as ‘managerial overhead’ instead of compelling today’s knowledgeable workers to actively share their knowledge” and call for “a more design and action-oriented future research agenda that takes theories derived from larger enterprises as well as prior KM research into account but focuses more on the necessary capabilities of tools to foster and establish a knowledge sharing culture in SME” (Kramer *et al.*, 2017).

Using an interpretivist qualitative research paradigm based on over a hundred key reasons (based on 34 knowledge experts interviewed), the results show that cultural aspects also play a front role why larger organizations are also still struggling to implement knowledge and innovation management (Rivière and Calabrese, 2016). Utilizing Earl’s ‘Schools of KM’ taxonomy (Earl, 2001) as the lens, the responses also contributed to map KM’s future which foresees a technocratic KM approach dominating - not via automation - “but in a way where human and social interactions will be supported/empowered by KM technologies. Human will always remain at the centre of KM activities” (Girard and Rivière, 2016).

Not surprisingly, KM research has detected acceptance issues since the “KM discourse and practice is visibly oriented towards the appropriation of [the] individual” (referred to as KM tasks assigned to employees by management) for better organizational economic performance rather than towards his/her “participation” (referred to as “KM tasks determined jointly by individuals and management”) (Rechberg and Syed, 2014, p.1).

Table 1 summarizes the aspects discussed and the further characteristics identified during the prior conducted and published DSR activities. The work carried out also includes the synthesis of twelve renowned traditional

²Share of application system class support (in%): Search (65); Groupware (59); Data mining (53); Filtering (44); Document Management (38+12); Virtual Teaming (26+3); Workflow Management (21); Wiki (6+15); Data Warehouse (15); Tagging (12); Chat (12); Weblog (12); Skill Management (3); (Video-)Conferencing (0+3); Telephony (0) (Kramer *et al.*, 2017).

models of knowledge creation and their visualization in a three-dimensional dynamic ‘public-transport-like’ map (Schmitt, 2019), an expanded version of Boisot’s three-dimensional information or I-space (Boisot, 2004).

The potential fruitful co-evolution alluded to between the OKMS and PKMS approaches is not only based on the complementing features shown, but also supported by the benchmarking of the PKMS concepts and affordances (Schmitt, 2022b) against the maiden ISO 30401:2018-KMS Standard (ISO.org, 2018).

Table 1: Organizational (OKMS) versus Personal KMS (PKMS) Features and Paradigms

Conventional Organizational KMS	versus Cloud-based Personal KMS
Monolithic. Centralized. Top-Down.	Distributed. Decentralized. Bottom-Up.
High Investment. High Maintenance.	Affordable.
Document-centric. Organizational Focus	Knowledge-Worker-Centric Approach: Personalization, Mobility, Generativity, Entropy Reduction.
Fairly homogeneous User Base with similar Competencies, Objectives, and Environments.	Serving Community with highly diverse Skills (Gifts), Ambitions (Ends), Potential (Means), Settings (Contexts).
Failures related to Acceptance due to cultural and Appropriation Issues.	Focus on Participation in Platform Community among Peers/Equals.
Not well integrated KM Schools.	Social and Knowledge Connectedness.

2.2 Tech-for-Good to Support the Inner and Sustainable Development Goals

The United Nations' seventeen interlinked Global Goals for Sustainable Development (SDGs) define a shared holistic blueprint for peace and prosperity. Its three goals of education, work, and equality are closely related to the field of educational technology, which - as a cross-cutting key enabler - also affects all other SDG areas. As education is at the forefront of tackling widening opportunity divides, many SDG-linked initiatives support its advancement towards more successful frameworks and interventions. The most prominent Inner Development Goals (IDGs), for example, emphasize the relevance of connectedness, complexity awareness, communication and co-creation skills (IDG Initiative, no date) (Figure 1, bottom left).

By adding further detail, the recently introduced IEEE standard for digital intelligence ensures that efforts directed at personal and community development become more holistic, coordinated, and forceful. The standard’s twenty-four ‘Digital Intelligences’ are grounded in universal moral values and enable individuals to face the challenges of digital life and adapt to its demands. They comprise the eight areas of security, safety, communication, rights, literacy, identity, emotional intelligence, and use, across three levels of citizenship, creativity, and competitiveness. The twenty-four intelligence perspectives are further subdivided into a total of 97 micro badges (IEEE, 2021; DQ Institute, 2022) (Figure 1, top left).

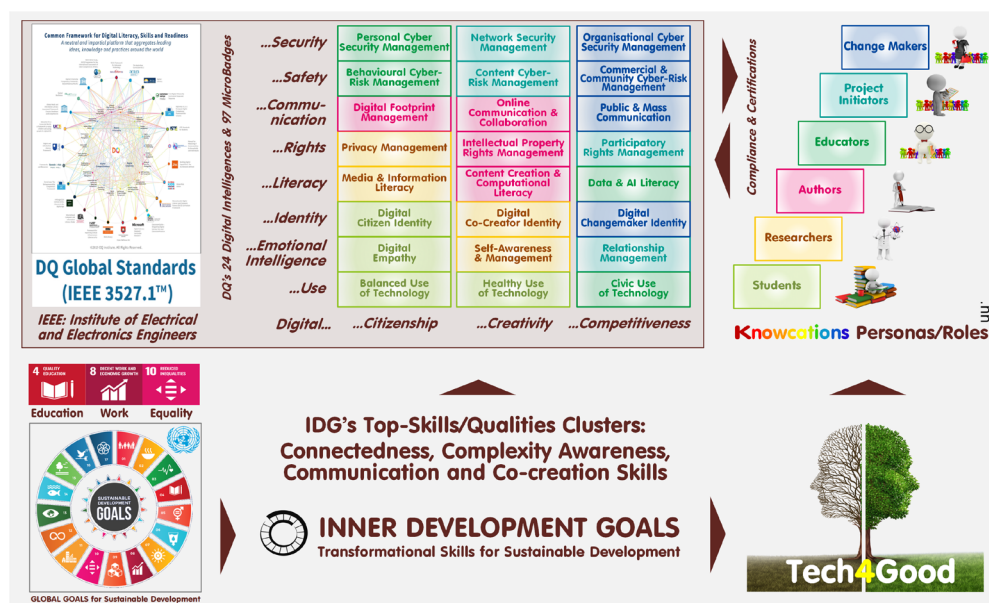


Figure 1: Sustainable/Inner Development Goals, DQ Standard, and PKMS Platform

As an innovative Tech-4-Good start-up and digital platform, the digital platform under development (named Knowcations®) aims to serve platform community members with diverse skills, ambitions and means in their distinct contexts. This diversity is reflected by six personas or progressing career roles (student, researcher, author, educator, project initiator, and change maker) which are currently utilized in the minimal viable prototype development stages (to be discussed further in section 3) (Figure 1, right).

Figure 1 shows how these frameworks, criteria, and technologies are related. The matching colour scheme applied in the upper sections highlights the relevance between the role-specific platform features and the twenty-four digital intelligences. The plan is to undergo the DQ accreditation process (DQ institute, no date) once the platform implementation has sufficiently progressed.

2.3 From Academic DSR Project Space to up Incubation Space

To innovate, enterprises need to know what potential clients desire and what may affect their choices. They gain the needed insights to improve on their initial ideation propositions by consulting and empathizing with relevant stakeholders (e.g., current and potential buyers, users, agents, and competitors).

Lean start-up methodologies differentiate this approach further by continuously incorporating “early adopters’ feedback as soon as possible” in entrepreneurs’ research and development processes via iterative “Learn-Build-Measure” cycles (Lenarduzzi and Taibi, 2016). Key objective is the creation of a Minimal Viable Product (MVP) defined as “a version of a new product, which allows a team to collect the maximum amount of validated learning about customers with the least effort” (Ries, 2011). A systematic mapping study on the MVP definitions proposed shows that the ‘minimal’ attribute has been associated with, for example, efforts, requirements, feature sets, functionalities, value organization, smallest possible implementation as well as low quality early prototype; the aim of maximizing refers to customer-originating validated learning and feedback/evaluation (Lenarduzzi and Taibi, 2016).

In these iterations, the MVP’s thinking, problem definition, and ideated solution is continually modified/refined [learn], and its feasibility of redrafted technical and organizational functionalities/features is piloted [build] while its viability of cost-benefit-value-considerations is evaluated [measure]. The associated learning and evaluation processes are repeated until the MVP reaches an acceptable product-market-fit (PMF) which affords a sustainable innovation and business model (which may also depend on the successful conclusion of several recurring funding rounds).

A recent case study demonstrated how the original MVP approach was extended and utilized in an established larger organization (Figure 2, col.1). Here, a “‘Synchronize Step’ was included to recognize the need for changes in the parent organization in order to take advantage of the opportunities offered by the Lean Start-up approach” (Dennehy *et al.*, 2019).

This iterative MVP process is remarkably like the DSR approach without, of course, its focus on academic relevance, rigor, and publishability in Information Systems research outlets. It very much resembles the manner in which Design-Knowledge (DK) Base advocates are trying to promote the quantitative and qualitative cumulative development and evolution of DSR knowledge (Figure 2, col.2) (Vom Brocke *et al.*, 2020). Together with the two methodologies (Suh, 1995; Schmitt, 2021b) applied at the earlier academic stage (Figure 2, col.3,4), these problem-solving and design-supporting approaches all fit a more general iterative pattern which applies to both academic and entrepreneurial innovations.

Usher’s Cumulative Synthesis Loop (CS) (Usher, 2013) provides a convincing account of the real-time iterative innovation activities of knowledge workers (Figure 2, col.5), Usher presents the emergence of novelty “as an accumulation of many individual items over a relatively long period of time. The magnitude of the individual item is small, but through [processes of] ‘Cumulative Synthesis’ the product becomes important” (Usher, 2013, p.61). Not every individual knowledge item, idea or ‘meme’³ captured might be of immediate utility, but, what

³To address the escalating predicaments of accelerating information abundance and overload, the platform applies the memetic concept introduced by Dawkins (Dawkins, 1976). A meme represents an atomic cognitive unit of cultural transmission captured in a standardized format. Inter-related memes combine for any story or knowledge asset by providing a much higher granularity than the current document-centric paradigm. Memes are stored in a knowledge graph allowing to consolidate their social and informational connectedness, to reduce their needless replication, to curate their content, and safeguard their associative integrity. The approach resembles modern manufacturing, where the materials, labour, processes, and logistical resources needed for producing products or services are digitally combined for managing, tracing, and innovating extensive supply chains and value systems.

might be considered to be irrelevant or misguided at a given time may turn out to be valuable later, and vice versa (Garud *et al.*, 2016).

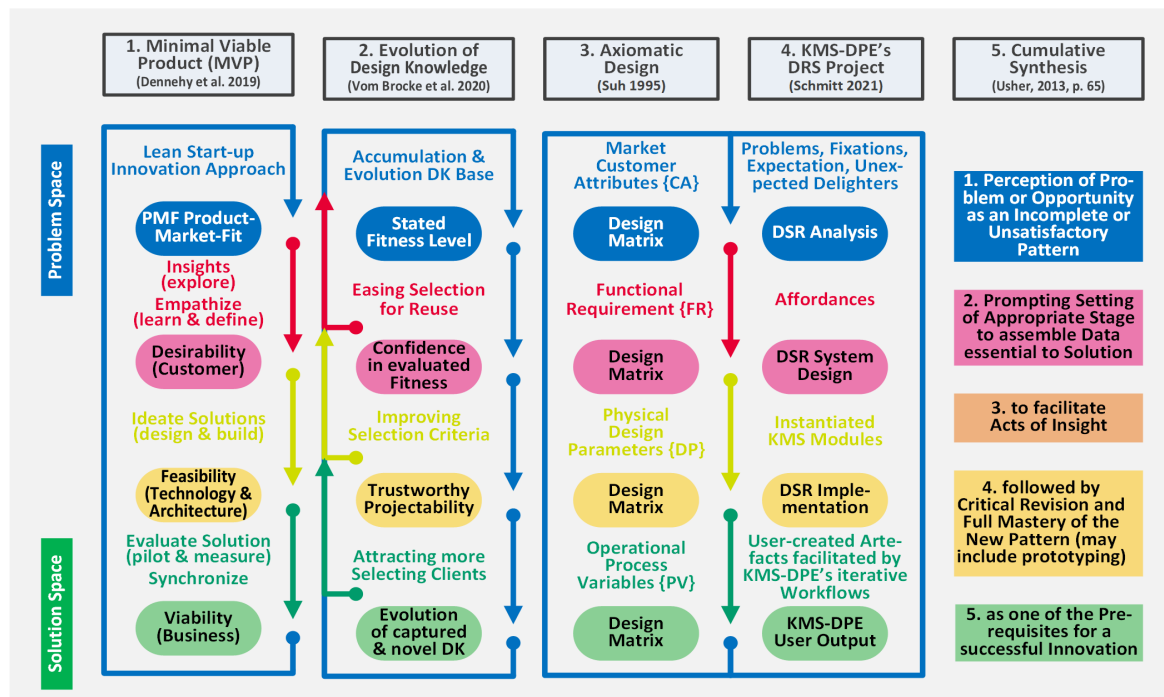


Figure 2: Alignment of Design and Problem-Solving Methodologies referred to (based on Dennehy *et al.*, 2019; Vom Brocke *et al.*, 2020; Suh, 1995; Schmitt, 2021b; Usher, 2013)

The knowledge co-creation platform allows the CS notion to fan out from the personal concern and absorptive capacity of an individual member to the networked problem-solving and design capabilities of the multi-disciplinary 'Knowcations' community.

3. From Academic DSR Space to Start-up Incubation Space

Figure 2 exemplifies how design knowledge "emerges through iterative design and evaluation processes" as a relational concept "at the intersection of a problem space and a solution space" from basic to design science and practice (Seckler, Mauer and vom Brocke, 2021, p.4). As a complex longitudinal DSR project, the PKMS outputs represented novel artefacts (constructs, models, methods, and instantiations (March and Smith, 1995)) and theories (section 3.2) contributing to the collaborative construction of the academic knowledge base.

The purpose of the platform, however, is to build a meta-artefact (Iivari, 2003) for facilitating the formation of and interaction with their elementary counterparts (knowledge assets and community membership). Its viability and ultimate market success depends on 'Theory Effectiveness', a DSR paradigm which expects designs to be purposeful - both in terms of utility (a matter of content/function) and communication (a question of presentation) to an audience (O'Raghallaigh, Sammon and Murphy, 2011a).

Although presented as a complementing concept and system, the novel PKMS design and platform feature radical shifts compared to traditional OKMS configurations. However, the socio-techno-cultural contexts in which stakeholders are immersed tend to limit their problem awareness and interpretations (incl. perceptions of complexity and entropy) to just those states and prospects within their actual familiar perspectives (trapped in current paradigms). Radical "design driven innovation is therefore pushed by an [entrepreneurial] firm's vision" and innovative thought leadership as a "proposal of possible breakthrough meanings" and "by looking at long-term phenomena with a broader perspective" (Verganti, 2008, p.5). Taking a longer-term view especially applies to creating a novel digital platform as its future scalability must be considered with every iterative developmental step.

The construct of lean start-ups is, in contrast, based on a classic design funnel approach where initial larger sets of aspiring entrepreneurs' ideas are undergoing short-cycle adaptations, screenings, and rejections to allocate resources to ever smaller sets of the promising business models left standing.

The idea of the ‘Synchronize Step’ added in the MVP cycle to coordinate with a parent organization (Dennehy *et al.*, 2019) (Figure 2, col.1) provides a potency to be repurposed for consulting with a more holistically positioned conceptualized authority (e.g., overarching longer-term vision or constraint) in order to ‘harmonize’ ideations emanating from the start-up-oriented agenda and stakeholder environment.

In the author’s view, this focus on different time horizons coupled with the (academic versus start-up) expectations of the author’s outputs represents the most pressing challenge between academic DSR and start-up space. The sub-sections will further exemplify this issue.

3.1 Minimal Viable Platform in Need of Maximal Verifiable Proposals

Entrepreneurs cultivate identity stories or proposals “that position their ventures in specific institutional fields” aiming for “audience perceptions of optimal distinctiveness” which “may enhance the perceived legitimacy of a novel venture and facilitate access to resources.” Constructing a coherent story that rationalizes the purpose and functioning of a new venture, thus, creates target-specific artefacts (the same iterative MVP approach depicted in Figure 2, col.1 may be applied) able to establish organizational identities which are comprehensible, meaningful, and appealing to relevant audiences (Glaser and Lounsbury, 2021, p.1).

Although the PKMS’s longitudinal DSR streams and publications motivated and rationalized the continually evolving artefacts and design theories to a primarily academic audience following the obligatory editorial and peer review processes, the terminology and detail applied do not fit well with the start-up scene where the pitches are rather restricted to slide decks or elevator rides. Reinforcing this ‘informing gap’ is the fact that knowledge and knowledge management are rather abstract concepts with no ‘real world’ referents where structure and comprehensibility need to be provided by applying more familiar ‘real world’ things in the form of metaphors and analogies (Andriessen, 2006, 2011).

Finding appropriate expressions, models, and rationales to bridge this communication barrier has required considerable time-consuming efforts. As “stories need to be credible, commensurable, and have narrative fidelity” (Glaser and Lounsbury, 2021, p.8), an appreciation model has been devised which uniquely addresses the six personas/roles depicted in Figure 1. A paper-in-progress will present it as a matrix where six persona-related value propositions (absorptive capacity, generative, functional, psychological, economic, and learning/network value) are cross-referenced with eight levels of attractive quality). The resulting forty-eight segments are explained and configured for the concerned audiences, supported by animated videos and web presentations, and linked to the ‘academic’ prior publications and external sources to provide further verifiability.

3.2 Theorizing and Framing to Synchronize Short-&-Long-Term Aspirations

Further ‘Synchronizing Steps’ are, hence, being triggered by taking on board new ideas and requests (like setting up the aforementioned appreciation model) and require what has been referred to as theorizing (advancing theories to describe/explain practices) and framing (advancing theories for generating these practices) (Romme and Dimov, 2021).

Initially, the motivational triggers of the DSR project have been the opportunity divides caused by an accelerating information abundance and the lack of adequate tools and applications to support our finite cognitive attention capabilities. This subsection exemplifies the subsequent theorizing-framing-iterations (Table 2) by reflecting on major academic and start-up twists and turns encountered.

Table 2: Iterative Theorizing and Framing Approach (based on Romme and Dimov, 2021)

Steps	Selected Iterative Steps taken in the Design/Development Stages with References
Theorizing	Integrating: Nonaka’s Theory of Organizational Dynamic Knowledge Creation (Nonaka, Von Krogh and Voelpel, 2006) (Figure 3, col.1) and other KM Models with Popper’s Three Worlds Theory (Popper, 1978) (Figure 3, col.2).
	Reflection: Popper’s thought world:3 not represented in these KM notions.
	Conclusion: Current KM models blindsided (blue area) with respect to the emerging and rapidly growing entropy-proliferating sustainability gaps of today’s web and cloud technologies.
	Effect: Current KM systems are not accessible to the wider public, entrepreneurs, or SMEs due to lacking significant features (Table 1).

Steps	Selected Iterative Steps taken in the Design/Development Stages with References
	Further Evidence: Big-T and small-t notions detail why and how information and knowledge entropy emerges at an individual level before it may rapidly replicate, fragment, or depreciate (O'Raghallaigh, Sammon and Murphy, 2011b).
Framing	Initial Design Solution: Briscoe's Theoretical Framework for Digital Ecosystems (Briscoe, 2010) and Gibson's Theory of Affordances (Gibson, 1977) offer descriptive theories to rigorously ground the PKMS research.
	Impact: Differentiating Nonaka's SECI model (socializing, externalizing, combining, internalizing) into eight distinct digital ecosystems with two further unique ecosystems to cater for Popper's world:3 gap (Figure 3, col.3). Emerging of SICEE model (seizing, imbedding, collating, encompassing, and effectuating) as an expanded pendant to Nonaka's SECI cycle but with workflows following a reverse direction (Figure 3, col.4).
Theorizing	Verification: The SICEE model's knowledge stock and flows shown to integrate with other descriptive theories like Pirolli & Card's Notional Model of Sensemaking Loop for Intelligence Analysis (Pirolli and Card, 2005), Carvajal-Pérez's C-K Design Theory Representation of four Types of Generativity, and Elia et al's Theory of Digital Entrepreneurship (Elia, Margherita and Passiante, 2020) (Figure 3, col.5,6).
Framing	Communication: Usher's Cumulative Synthesis (Usher, 2013) (Figure 2, col.5) and Bush's still unfulfilled vision of the 'Memex' together with Dawkins' Theory of Culture-as-Memes and Memes as Living Organisms (Dawkins, 1976) and Koch's Theory of Business Genes (Koch, 2001) further inform design solution and prototyping (Figure 2, col.3,4) and assist in rationalizing the proposed shift from a document-centric to a meme-and-knowledge-graph-based paradigm.
Theorizing	Positioning: Applying cluster-model of current digital platform ecosystems according to their underlying processes, key market attributes, and value propositions (Murthy, 2021) to establish PKMS as the envisaged platform community for knowledge creation and its need for platform sponsor scope considerations (Schmitt, 2022a).
Framing	Projecting: PKMS/DSR academic contributions reinterpreted according to a projectability and worldmaking logic (Baskerville and Pries-Heje, 2019; Schmitt, 2021a). Incipient, growth, and maturity stages of a scalable platform and community defined (Schmitt, 2022a).
	Communication: As the above intricate background overloads any effort to inform an audience outside academia purposefully and understandably (theory effectiveness criteria, section 3), new models, terms, and reasonings have been devised (see example below).

The last row addresses a start-up-adequate communication strategy and entails, for example:

- The six personas introduced as progressing career roles (student, researcher, author, educator, project initiator, and change maker, Figure 1, top right). They align to the digital ecosystems depicted (Figure 3, col.3,7) and are used to also illustrate the start-up's MVP roadmap and its business plan.
- The alignment of the PKMS to the SDGs, IDGs, and Digital Intelligences (section 2.2, Figure 1) to further rationalize its scope as a Tech4Good solution.
- The focusing on four types sources (embrained [minds], encapsulated [objects], encoded [records], and explorable [voids]) for taking account of our knowledge and ignorance. Any knowledge creation process (including the platform workflows) involves iterative sensemaking and sense-giving to cumulatively synthesize any memetic representations of these types as input and output (Figure 3, col.8).
- The rationalizing of 'Documents'⁴ as an outdated 'book-age' paradigm and technology:
As publishing unvetted digital content in our digital times only requires simple clicks, the levels of replications and noise are constantly rising. Digital containers (from web components to files) partially include identical content and are cloned across web sites, folders, and directories, often without indicating their sources or versioning history. Digitally stated facts or ideas may also not stay unchanged, or even accessible. Increasingly unstable and ambiguous settings compromise our web

⁴As the habitual choice for representing and memorializing our thoughts across minds, space, and time, documents are meant to contain sufficient information to avoid the need for immediate further investigations within their main topics. By design, they contain prior knowledge in the form of copied-and-pasted, already-published material. Verification provided by scholarly or publishing authorities is used to ensure finality and lasting accessibility.

searches and deplete our limited attention, memory, and time resources. Instead of supporting progressing knowledge economies, opportunity divides across the world are widening.

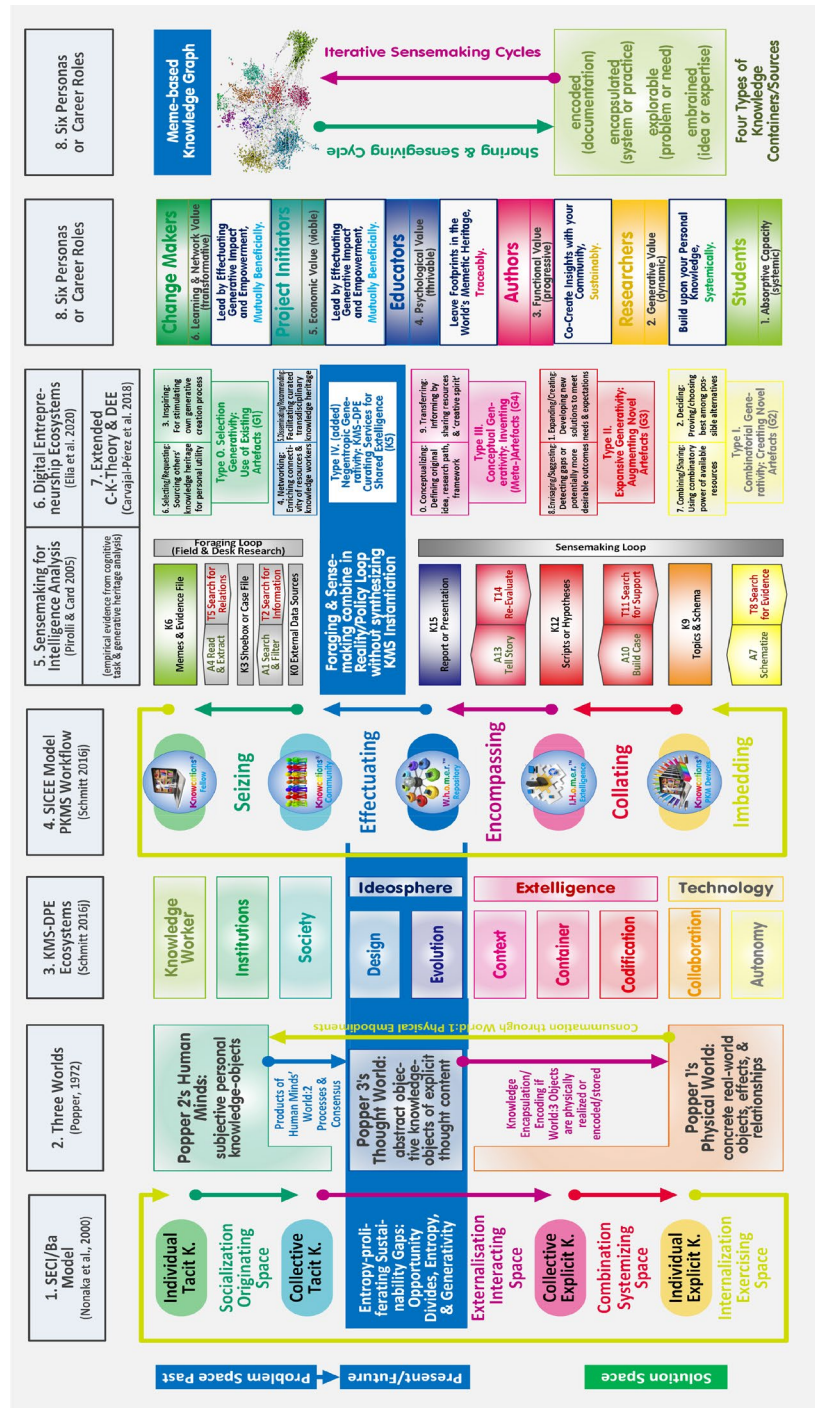


Figure 3: Framing and Reframing based on existing descriptive and novel design theories

4. The Road Ahead

The examples provided are only highlighting some of the major aspects of the DSR's theorizing and framing history as close to six hundred unique external sources have been referenced in the prior publications. Their meme-based representations are providing one of the knowledge repositories for testing the prototype platform. It is envisaged to repurpose them as learning assets to serve the platform's educational KM agenda.

The academic DSR publications will commence to inform about testing results and platform sponsor scope considerations, including trust and promise engineering. Reporting on how and why the novel digital platform artefact performs to achieve the anticipated benefits in unison with a committed community is planned to also

contribute to the prescriptive 'Five interrelated Types of Theory' (for design and action) (Gregor, 2006) as well as the interior and external mode in the design-centric framework (Baskerville *et al.*, 2018).

References

- Andriessen, D. (2006) 'On the metaphorical nature of intellectual capital: a textual analysis', *Journal of Intellectual capital*, 7(1), pp. 93–110.
- Andriessen, D. (2011) 'Metaphor use in knowledge management', in *Encyclopedia of Knowledge Management, Second Edition*. IGI Global, pp. 1118–1124.
- Baskerville, R. *et al.* (2018) 'Design Science Research Contributions: Finding a Balance between Artifact and Theory', *Journal of the Association for Information Systems*, 19(5), pp. 358–376.
- Baskerville, R. and Pries-Heje, J. (2019) 'Projectability in Design Science Research.', *J. Inf. Technol. Theory Appl.*, 20(1), p. 3.
- Boisot, M. (2004) 'Exploring the information space', *University of Pennsylvania*, pp. 5–8.
- Briscoe, G. (2010) 'Complex adaptive digital ecosystems', in *Proceedings of the International Conference on Management of Emergent Digital EcoSystems*. ACM, pp. 39–46.
- Dawkins, R. (1976) *The selfish gene*. Oxford university press.
- Dennehy, D. *et al.* (2019) 'A Lean Start-up approach for developing minimum viable products in an established company', *Journal of Decision Systems*, 28(3), pp. 224–232.
- DQ Institute (2022) *Global Standards*. Available at: <https://www.dqinstitute.org/global-standards/#contentblock1> (Accessed: 12 July 2021).
- DQ institute (no date) 'Collaborative R&D.' Available at: <https://www.dqinstitute.org/collaborative-rd/> (Accessed: 31 December 2022).
- Earl, M. (2001) 'Knowledge management strategies: Toward a taxonomy', *Journal of management information systems*, 18(1), pp. 215–233.
- Elia, G., Margherita, A. and Passiante, G. (2020) 'Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process', *Technological Forecasting and Social Change*, 150, p. 119791.
- Garud, R. *et al.* (2016) 'From the process of innovation to innovation as process', *The SAGE handbook of process organization studies*, pp. 451–466.
- Gibson, J.J. (1977) 'The theory of affordances', *Hilldale, USA*, 1(2).
- Girard, J. and Ribière, V. (2016) 'Mapping the future of KM through Earl's KM Taxonomy Lens', *Online Journal of Applied Knowledge Management*, 4(1), pp. 180–191.
- Glaser, V.L. and Lounsbury, M. (2021) 'Designing legitimacy: Expanding the scope of cultural entrepreneurship', *Journal of Business Venturing Design*, 1(1–2), p. 100007.
- Gregor, S. (2006) 'The nature of theory in information systems', *MIS quarterly*, pp. 611–642.
- Hevner, A.R. *et al.* (2004) 'Design science in information systems research', *Management Information Systems Quarterly*, 28(1), p. 6.
- IDG Initiative (no date) *The Framework & IDG Report, Inner Development Goals*. Available at: <https://www.innerdevelopmentgoals.org/framework> (Accessed: 1 January 2023).
- IEEE (2021) *IEEE Standard 3527.1-2020, IEEE Standard for Digital Intelligence (DQ)--Framework for Digital Literacy, Skills, and Readiness*. Available at: https://standards.ieee.org/standard/3527_1-2020.html (Accessed: 12 July 2021).
- Iivari, J. (2003) 'The IS core-VII: Towards information systems as a science of meta-artifacts', *Communications of the Association for Information Systems*, 12(1), p. 37.
- ISO.org (2018) *ISO 30401:2018(en), Knowledge management systems - Requirements*.
- Koch, R. (2001) *The Power Laws of Business: The Science of Success*. Nicholas Brealey.
- Kramer, F. *et al.* (2017) 'Computer-Supported Knowledge Management in SME'.
- Lenarduzzi, V. and Taibi, D. (2016) 'MVP explained: A systematic mapping study on the definitions of minimal viable product', in *2016 42th Euromicro Conference on Software Engineering and Advanced Applications (SEAA)*. IEEE, pp. 112–119.
- Levy, P. (2011) *The semantic sphere 1*. NY, USA: Wiley New York.
- March, S.T. and Smith, G.F. (1995) 'Design and natural science research on information technology', *Decision support systems*, 15(4), pp. 251–266.
- Murthy, R.K. (2021) 'Essays on Platform Sponsor Scope: Implications for Ecosystem Emergence and Growth', [*Doctoral dissertation, York University*], Toronto, Ontario. [Preprint]. Available at: https://yorkspace.library.yorku.ca/xmlui/bitstream/handle/10315/38699/Krishna_Murthy_Ramya_2021_PhD.pdf.
- Nonaka, I., Von Krogh, G. and Voelpel, S. (2006) 'Organizational knowledge creation theory: Evolutionary paths and future advances', *Organization studies*, 27(8), pp. 1179–1208.
- O'Raghallaigh, P., Sammon, D. and Murphy, C. (2011a) 'The design of effective theory', *Systems, Signs & Actions*, 5(1), pp. 117–132.
- O'Raghallaigh, P., Sammon, D. and Murphy, C. (2011b) 'Towards an ontology of innovation models-a conceptual framework.', in *ECIS*, p. 156.
- Pirolli, P. and Card, S. (2005) 'The sensemaking process and leverage points for analyst technology as identified through cognitive task analysis', in *Proceedings of international conference on intelligence analysis*. McLean, VA, USA, pp. 2–4.

- Popper, K. (1978) 'Three Worlds: The Tanner Lecture on Human Values: Delivered at the University of Michigan', *The Tanner Lectures, Humanities Center, University of Utah: Salt Lake City, UT, USA* [Preprint]. Available at: https://tannerlectures.utah.edu/_resources/documents/a-to-z/p/popper80.pdf.
- Rechberg, I.D. and Syed, J. (2014) 'Appropriation or participation of the individual in knowledge management', *Management Decision* [Preprint].
- Rivière, V. and Calabrese, F.A. (2016) 'Why are companies still struggling to implement knowledge management? Answers from 34 experts in the field', in *Successes and Failures of Knowledge Management*. Elsevier, pp. 13–34.
- Ries, E. (2011) *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Currency.
- Romme, A.G.L. and Dimov, D. (2021) 'Mixing oil with water: Framing and theorizing in management research informed by design science', *Designs*, 5(1), p. 13.
- Sarooghi, H., Libaers, D. and Burkemper, A. (2015) 'Examining the relationship between creativity and innovation: A meta-analysis of organizational, cultural, and environmental factors', *Journal of business venturing*, 30(5), pp. 714–731.
- Schmitt, U. (2016) 'Design science research for personal knowledge management system development - revisited', *Informing Science*, 19(1), pp. 345–379. Available at: <https://doi.org/10.28945/3566>.
- Schmitt, U. (2019) 'Decentralizing Knowledge Management: Affordances and Impacts', *Electronic Journal of Knowledge Management*, 17(2), p. pp114-130.
- Schmitt, U. (2021a) 'Projectability and Heritage Management of Design Knowledge: A Grass-Roots Artefact Perspective of a Longitudinal Research Project for Knowledge Management System Innovation', *Sustainability*, 13(23), p. 13033.
- Schmitt, U. (2021b) 'Reframing a Novel Decentralized Knowledge Management Concept as a Desirable Vision: As We May Realize the Memex', *Sustainability*, 13(7), p. 4038. Available at: <https://doi.org/10.3390/su13074038>.
- Schmitt, U. (2022a) 'Informing at the Crossroads of Design Science Research, Academic Entrepreneurship, and Digital Transformation: A Platform Ecosystem Roadmap', *Informing Science: The International Journal of an Emerging Transdiscipline*, 25, pp. 143–160.
- Schmitt, U. (2022b) 'Validating and documenting a new knowledge management system philosophy: a case based on the ISO 30401: 2018-KMS standard', *Knowledge Management Research & Practice*, 20(6), pp. 960–974.
- Seckler, C., Mauer, R. and vom Brocke, J. (2021) 'Design science in entrepreneurship: conceptual foundations and guiding principles', *Journal of Business Venturing Design*, 1(1–2), p. 100004.
- Secundo, G., Rippa, P. and Cerchione, R. (2020) 'Digital Academic Entrepreneurship: A structured literature review and avenue for a research agenda', *Technological Forecasting and Social Change*, 157, p. 120118.
- Suh, N.P. (1995) 'Designing-in of Quality Through Axiomatic Design', *IEEE Transactions on reliability* [Preprint].
- Usher, A.P. (2013) *A History of Mechanical Inventions: Revised Edition*. Courier Corporation.
- Verganti, R. (2008) 'Design, meanings, and radical innovation: A metamodel and a research agenda', *Journal of product innovation management*, 25(5), pp. 436–456.
- Vom Brocke, J. et al. (2020) 'Special Issue Editorial—Accumulation and Evolution of Design Knowledge in Design Science Research: A Journey Through Time and Space', *Journal of the Association for Information Systems*, 21(3), p. 9.
- Wiig, K.M. (2011) 'The importance of personal knowledge management in the knowledge society', *Personal knowledge management*, pp. 229–262.
- World Bank Group (2016) *World development report 2016: digital dividends*. World Bank Publications.

Maturity or Gender? An Abductive Approach to Study Workplace Meeting Effectiveness

Petr Šimáček¹, Věra Králová², Tereza Mňuk² and Pavel Král¹

¹Department of Social Sciences, Faculty of Management, Prague University of Economics and Business, Prague, Czech Republic

²Department of Management, Faculty of Management, Prague University of Economics and Business, Prague, Czech Republic

petr.simacek@vse.cz

vera.kralova@vse.cz

m nuk.terez a@gmail.com

pavel.kral@vse.cz

Abstract: Meetings are an integral part of organisational life, and their effectiveness is essential both for organisations and their employees. Meeting literature provides a rich overview of various factors impacting meeting effectiveness; however, the content of meetings is neglected as an important factor of meeting effectiveness. The content of the meeting can be assessed through related tasks, which form the central tenets of stratified systems theory. Stratified systems theory posits that a specific job position category is associated with a particular time horizon and characteristic tasks. Therefore, we used stratified systems theory as an appropriate framing for the research to test how the fit between the meeting content (characteristic tasks) and the employee's time horizon contributes to perceived meeting effectiveness. The study draws on a quantitative research design. Data were collected via a survey of seven organisations in different industries in the Czech Republic (n=96). Regression models and ANOVA were used as methods for data analysis. The findings reveal that neither an employee's time horizon per se nor the fit between meeting content (characteristic tasks) and the employee's time horizon influence perceived meeting effectiveness, which does not support the main hypothesis. However, the data revealed three other interesting findings, which we elaborated on using an abductive approach. First, by controlling all possible discriminating factors (such as job position category, education, age, and characteristic tasks), we found that women operate within a shorter time horizon. Second, women perceive meetings as more effective. Third, while we found a fit between the employee's time horizon and job position category, we did not find a fit between the employee's time horizon and meeting content (characteristic tasks) nor a fit between the job position category and meeting content (characteristic tasks), which challenges stratified systems theory. The research results contribute to meeting effectiveness literature by challenging the role of job position categories and meeting content. However, in the first place, the results open up a space for a fruitful research inquiry into gender studies and stratified systems theory.

Keywords: Meeting effectiveness, Stratified systems theory, Gender role, Content of meetings, Employee's time horizon

1. Introduction

Meetings are central to organisational life, and the time spent in meetings increases over time (Mosvick and Nelson, 1987; Tobia and Becker, 1990; Elsayed-Elkhoully, Lazarus and Forsythe, 1997; Leach *et al.*, 2009). Effective meetings promote work engagement (Lehmann-Willenbrock, Allen and Belyeu, 2016; Allen, Tong and Landowski, 2020), job satisfaction and well-being (Rogelberg *et al.*, 2006), and improve business performance (Kauffeld and Lehmann-Willenbrock, 2012; Rogelberg, Shanock and Scott, 2012). On the other hand, ineffective meetings significantly predict emotional exhaustion and intention to quit (Shanock *et al.*, 2013; Lehmann-Willenbrock, Allen, and Belyeu, 2016). Therefore, meeting effectiveness has attracted attention, and researchers have scrutinised various factors that impact meeting effectiveness concerning meeting design characteristics (Leach *et al.*, 2009; Cohen *et al.*, 2011; Allen *et al.*, 2012), meeting leadership (Allen and Rogelberg, 2013; Mroz, Schreiner and Allen, 2020), the interaction process (Volkema and Niederman, 1995; Kauffeld and Lehmann-Willenbrock, 2012; Shanock *et al.*, 2013; Král, Králová and Šimáček, 2023), and communication (Allen, Lehmann-Willenbrock and Landowski, 2014; Yoerger, Allen and Crowe, 2018).

Although meeting content is an important factor in meeting effectiveness (Köhler, Cramton and Hinds, 2012; Allen *et al.*, 2014), there is surprisingly little evidence on how exactly the content contributes to meeting effectiveness. Meeting content should reflect the job position (Leach *et al.*, 2009). Narrative evidence suggests that meetings are perceived as ineffective if their content does not correspond to participants' maturity, i.e., the meeting content either cognitively exceeds the maturity of a participant, or the content is too simple for the participant. However, empirical evidence is missing.

This study delves deeper into the under-researched domain of meeting content. Using a deductive approach and stratified systems theory, in which each stratum reflects a managerial maturity layer, we first test how the

fit between the meeting content and the employee's time horizon contributes to perceived meeting effectiveness. The tested fit has shown a non-significant effect on perceived meeting effectiveness; however, the data revealed interesting and unexpected insights that drove post-hoc analyses. Thus, using the abductive approach (Sætre and Van de Ven, 2021), we elaborated on findings to discover that women perceive differently not only meeting effectiveness but also the time horizons for work-related tasks. We also challenge the tenets of stratified systems theory and call for its revision.

2. Meeting Effectiveness and its Predictors

Meeting effectiveness describes the extent to which meetings help achieve the goals of the meeting attendees, the organisation unit, and the organisation itself (Rogelberg *et al.*, 2006). Although this definition considers an objective achievement of organisational or individual goals, most conceptualisations are based on a subjective evaluation of meeting-related aspects. The most frequently used measurement of meeting effectiveness (Rogelberg *et al.*, 2006) has six items, of which three evaluate achieving goals and three evaluate other meeting-related results.

Previous research has mostly focused on structural (e.g., meeting design characteristics) and process predictors (e.g., interactions) of meeting effectiveness. For example, Leach *et al.* (2009) found several design characteristics (in particular, agenda use and quality of facilities) to be important in predicting perceived meeting effectiveness. Cohen *et al.* (2011) grouped meeting design characteristics into four groups according to characteristics (temporal, physical, procedural, and attendee characteristics), where the importance of a meeting facilitator was emphasised. Other scholars scrutinised different types of behaviour that negatively affect meeting effectiveness (e.g., Shanock *et al.*, 2013; Lehmann-Willenbrock, Allen and Belyeu, 2016).

However, scarce attention was devoted to how the content of the meeting influenced meeting effectiveness. In general, a meeting is effective if the meeting is perceived as relevant to the participants (Allen and Rogelberg, 2013; Geimer *et al.*, 2015). One of the relevant criteria is the nature of the work-related tasks, which are for the meeting agenda (Allen, Tong and Landowski, 2020). Tasks in general, particularly the nature of the tasks in relation to a job position, form the central tenets of stratified systems theory (Jaques, 1986, 2016). Therefore, this research employs stratified systems theory to study meeting effectiveness concerning work-related tasks.

3. Stratified Systems Theory as a Perspective on the Content of the Meeting

The content of the meeting can be assessed through related tasks with particular time horizons, which form the central tenets of stratified systems theory. Stratified systems theory posits that a specific job position category is associated with a particular time horizon (strategic and tactical) and characteristic tasks (Jaques, 1986, 2016; Jaques, Bygrave and Lee, 2001). The strategic horizon breaks down into fewer or more tactical horizons and can be reached by a series of tactical horizons. While tactical horizons could significantly vary in length among the participants within the same stratum, the strategic horizon remains stable and constant within the same stratum (Jaques, Bygrave and Lee, 2001). Thus, we focused on the strategic planning time horizon (termed simply "time horizon" in the following text).

3.1 Hypotheses Development

Stratified systems theory suggests that an individual's career in an organisation evolves through different states of cognitive functioning. As their cognitive functioning matures and grows, they reach higher strata in organisations. Each stratum is linked to a specific organisational layer and reflects the employee's overall maturity. The stratum is determined by the job position, the time horizon and the characteristic tasks (see Table 1). The employees' time horizon is given by the time needed to complete the longest task or sequence of tasks in the employee's role within a given stratum (Jaques, 1986; Jaques, Bygrave and Lee, 2001). The target time horizon is central because there is a need to be both horizontally and vertically aligned across the strata (Jaques, Bygrave and Lee, 2001; Jaques, 2016). Therefore, it is crucial to meet settled milestones and behave with a certain level of accountability. This approach fixes not just each manager's own time horizon but also ensures the lateral and vertical alignment of the time horizons of each manager's subordinates with the manager's own, and aligns the time horizons of all the subordinates with each other (Jaques, Bygrave and Lee, 2001).

Workplace meetings serve as a tool for organisational coordination (Jarzabkowski and Seidl, 2008) through which accountability is executed (Okhuysen and Bechky, 2009). Coordination of strategic tasks may differ from the perspective of the time horizon. Employees with different lengths of time horizons could perceive meeting

effectiveness differently because employees with a shorter time horizon could perceive meetings as an interruption from other job tasks that they have to execute (Luong and Rogelberg, 2005; Rogelberg *et al.*, 2006; Beadle and Knight, 2012). Moreover, if the content of the meeting concerns long-term goals, they may perceive the meeting as ineffective, because they are not necessarily participants (Jett and George, 2003), while employees with a longer time horizon could perceive meetings as more beneficial to their long-term projects because they can incorporate recommendations and continuously react to ongoing changes in the environment. Therefore, we posit the initial hypothesis:

H1: The employee's time horizon influences perceived meeting effectiveness.

Stratified systems theory suggests that workers should perform tasks according to the level of complexity they can handle (certain strata) (Jaques, 2016). Only if workers are working on the tasks assigned to their stratum, can they feel motivated and satisfied at work, leading to a positive perception of their work effectiveness. Consequently, determining an employee's specific role corresponding to the current level of their maturity is crucial for the effectiveness of the entire organisation (Nickerson and Silverman, 2003). This challenge becomes even more pronounced when all employees have to meet in one type of meeting – the routine meeting.

The content of routine meetings should reflect the employees' level of maturity (stratum) and related characteristic tasks that mirror a certain strategic planning time horizon because employees should perform the tasks according to the cognitive functioning levels they can handle (Jaques, Bygrave and Lee, 2001; Espinosa, Lerch and Kraut, 2004). Thus, they would perceive tasks as more significant for accomplishing their goals (meeting the time horizon), which enhances their work engagement and leads to higher task performance (Christian, Garza and Slaughter, 2011). Assume an employee is working at a lower level than their cognitive development currently allows. In that case, the employee cannot exercise their abilities effectively and is bored and frustrated. Conversely, assume the employee is in a role that is currently too ambitious for them, i.e. for which their cognitive maturity is not sufficient. In that case, they feel stressed, lost, and ineffective – not because of the amount of but because of the quality of the work. Employees can be successful in their roles when they have the cognitive ability to do a job of particular complexity, objective knowledge, and commitment and will consistently behave in the manner required for the role (Jaques, 2020).

Research has only been concerned with participant relevance (Allen and Rogelberg, 2013; Geimer *et al.*, 2015), and there is no empirical evidence concerning task adequacy to the meeting attendee's maturity. The perception of time allocation, importance, autonomy, attention demands, and the complexity of each task can differ between meeting attendees (Taber and Alliger, 1995). Meeting interactions, which determine perceived meeting effectiveness, also depend on individual skills, group cohesion and the variability of the participants (Hackman and Morris, 1975; Taber and Alliger, 1995; Espinosa, Lerch and Kraut, 2004). According to the logic of stratified systems theory, a meeting will be perceived as effective if the meeting content reflects the task that is adequate to the participants' maturity and mirrors a certain time horizon. In particular, the meeting content must reflect the maturity or stratum of the participants. Therefore, we hypothesise:

H2: The fit between the employees' time horizon and the meeting content given by job characteristic tasks positively influences perceived meeting effectiveness.

Table 1: Extended strata built upon stratified systems theory (Jaques, 1986, 2016)

Stratum (Maturity)	Employee's strategic time horizon	Characteristic tasks (meeting content)	Job position category
I	1 day – 3 months	Carrying out precisely assigned work,	Executives (e.g., assistant)
II	3 months – 1 year	Organisation of work within the set guidelines	First-line manager (e.g., head of an accounting office)
III	1 – 2 years	Work planning according to the current trends, responsiveness, and adjusting the job content	Second-line manager (e.g., department manager)
IV	2 – 5 years	Making decisions based on acquaintances' systems, their knowledge and subsequent comparison	General manager (e.g., general manager factories)

Stratum (Maturity)	Employee's strategic time horizon	Characteristic tasks (meeting content)	Job position category
V	5 – 10 years	Shaping the future direction (creating the future instead of just forecasting the development)	Branch CEO (e.g., CEO of a national branch)
VI	10 – 20 years	Shaping direction worldwide, changing institutions from the outside	CEO of the division (e.g., executive vice president 14 branches)
VII	20 – 50 years	Building institutions and theories, their implementation into society as a whole	CEO of a corporation (e.g., multinational CEO corporation)

4. Methods

4.1 Sample and Procedure

A survey research design was used to test the effect of the meeting content and the employees' time horizon on perceived meeting effectiveness among regular workplace meeting attendees. Respondent-driven sampling was used (Heckathorn, 2011; Heckathorn and Cameron, 2017). This sampling approach provides asymptotically unbiased estimates about populations where it is difficult to list population members and yields more representative samples than larger samples recruited via convenience sampling or a self-selection approach (James, 2006; Heckathorn, 2011). The sample was selected from organisations providing internships to students at a prominent business school.

Representatives (CEOs in small organisations and HR managers in large organisations) from seven organisations were approached to recruit approximately 15 (if possible) employees, each from their organisation, who would regularly attend workplace meetings. The representatives were asked to send the questionnaire to participants in different positions (specialists, lower and middle managers) with varying levels of expertise and to include participants of both genders and various age groups. This procedure yielded 96 returned and completed questionnaires, which indicates a response rate of over 90%.

The respondents ranged in age from 21 to 58 ($M = 36.09$; $SD = 9.34$), with 39 males (40.6%) and 57 females (59.4%). Most of the participants have a university degree (70.8%), 5 participants had higher professional education (5.2%), 23 had high school education (24%), and there were no participants representing primary education.

4.2 Measures

The questionnaire consisted of the scales previously validated in meeting literature, or adopted scales from Jaques's (1986, 2016, 2020) stratified systems theory. Pre-testing the instrument proved a good understanding of the questionnaire items.

Perceived meeting effectiveness was measured by Rogelberg *et al.* (2006) 5-item questionnaire, where the sixth item, "achieving your department–section–unit's goals," was excluded because employees on lower job levels cannot correctly evaluate this statement. Participants were asked to rate the meeting effectiveness of the typical meeting they attended. Responses were rated on a 5-point scale (from extremely ineffective to extremely effective). An average score was computed across the six items ($\alpha = .82$, $M = 3.68$, $SD = .79$).

Employee's time horizon was assessed with four related items according to stratified systems theory (Jaques 1986, 2016, 2020). Meeting attendees were asked to evaluate the longest time spent with a particular work-related task or a task sequence (e.g., projects) in terms of the following: "time horizon planning," "time horizon of the longest task or project," "the longest time horizon allocated by a supervisor to a particular task accomplishment" and "the longest particular time horizon." Responses reflected strata (seven categories; category 1 = one day to three months; category 7 = 20 to 50 years) according to Jaques (1986) (see Table 1). An average score was computed across the four items ($\alpha = .83$, $M = 2.12$, $SD = .83$).

Meeting content was assessed through characteristic tasks of the typical attendees. Responses were aligned to seven categories according to particular strata (Jaques, 1986; see Table 1).

The fit between the employee's time horizon and the meeting content–characteristic tasks was operationalised as an absolute value of the difference between the average value of meeting content–characteristic tasks and

the average value of the employee's time horizon. This approach allows us to identify the fit between job position category perception and the real inclusion of the given position in the organisational structure. A perfect fit yields zero value, and the higher value is the misfit between the employees' time horizon and meeting content.

The job position category was based on Jaques's (1986) strata (seven categories in Table 1).

Demographic characteristics, such as *gender* (1=woman), *age*, and *education* level, were measured as control variables. Another control variable represented important meeting design characteristics with the effect on perceived meeting effectiveness. These meeting design characteristics comprised the *length of the typical meeting* (Luong and Rogelberg, 2005; Leach et al., 2009), *meeting facilitator-lead* (Cohen et al., 2011), *meeting size* (Leach et al., 2009; Geimer et al., 2015), and *perceived participant's relevance* (Allen and Rogelberg, 2013). Additionally, the growing number of online and hybrid meetings enabled us control the form of the meeting.

5. Results

Regression models and ANOVA were conducted using Stata (ver. 16.1) to test the hypotheses. Multicollinearity did not affect the regressions because the correlation matrix revealed low correlations across the variables (see Table 2). Following the research framework, we used a set of hierarchical regression models. Table 3 presents a set of five regression models representing perceived meeting effectiveness as the result of the employee's time horizon and the fit between the employee's time horizon and meeting content (Models 1-5). Model 1 tested only the control variables concerning demographic characteristics. Model 2 tested the control variables representing both demographic and meeting design characteristics. Model 3 yielded regression results for the control variables and the employee's time horizon. Model 4 yielded regression results for the control variables and fit between meeting content and employee's time horizon. Model 5 included all the variables of the research framework.

Gender significantly affected each model, and women perceived meetings as more effective. Similarly, meeting size had a significant effect on each model. Meetings with fewer participants were evaluated as more effective. The other control variables did not significantly affect any of the models. Models 3 and 5 yielded non-significant results for the hypothesised effect of the employee's time horizon on perceived meeting effectiveness. Therefore, H1 did not find support. H2, which predicted that the fit between meeting content and the employee's time horizon would positively influence perceived meeting effectiveness, was not supported by the results yielded in Models 4 and 5.

The results revealed that neither the employee's time horizon per se nor the fit between meeting content and the employee's time horizon influence perceived meeting effectiveness, which does not support the main hypotheses. However, the data revealed interesting insights that drive hunches for post-hoc analyses using an abductive approach concerning differences among genders (Sætre and Van de Ven, 2021).

Table 2: Variables: Means, standard deviations, reliability coefficients, and correlation matrix

Variables	Mean	SD	a	b	c	d	e	f	g	h	i	j	k
Dependent variable													
a) Perceived meeting effectiveness (α=.82)	3.68	.079	1.00										
Independent variables													
b) Employee's time horizon (α=.83)	2.12	.832	-0.16	1.00									

Variables		Mean	SD	a	b	c	d	e	f	g	h	i	j	k
<i>Dependent variable</i>														
l) Meeting form		2.59												
		.625												
k) Perceived participants' relevance		3.65	.598	0.14	0.04	-0.12	-0.15	0.04	0.11	0.04	0.15	0.24*	-0.02	1.00
		-0.09												
j) Meeting size		8.29	3.705	-0.23*	-0.04	-0.19	0.02	0.13	0.01	-0.24*	0.23*	0.08	1.00	
		4.26	.954	0.18	-0.07	-0.03	-0.03	0.05	0.19	-0.04	0.23*	1.00		
i) Meeting facilitator led		85.36	79.99	0.06	0.24	0.04	0.15	0.14	0.23*	-0.28**	1.00			
		4.03	1.269	-0.06	0.27**	0.02	-0.19	-0.15	-0.07	1.00				
g) Education		36.08	9.338	0.16	0.19	0.06	-0.03	0.08	1.00					
		.59	.494	0.27**	-0.26*	-0.09	0.05	1.00						
f) Age														
e) Gender (woman = 1)														
Control variables														
d) Fit between meeting content and employee's time		1.22	.873	-0.07	-0.29**	0.55**	1.00							
c) Meeting content		3.10	.901	0.01	0.14	1.00								

Variables	Mean	SD	a	b	c	d	e	f	g	h	i	j	k
Dependent variable													
Online	.07	.262											
Offline	.26	.441											
Hybrid	.67	.474											

Note: Variables: age, meeting length, and meeting size were continuous. Education was measured on a 6-point ordinal scale. The facilitator-led meeting was accessed with a 5-point scale (1 – "Never" to 5 – "Always"). Perceived participant's relevance was accessed with a 4-point scale (1 – "No participant is relevant" to 4 – "All participants are relevant"). The meeting form was treated as a categorical variable with consequent transformation to dummy variables.

P-values in parenthesis.

* p<.05

** p<.01

Table 3: Linear regression model for perceived meeting effectiveness

		Model 1	Model 2	Model 3	Model 4	Model 5
Hypothesised relationship						
Employee's time horizon (H1)				-.167		-.214
				(.116)		(0.055)
Fit between meeting content and time horizon (H2)					-.069	-.127
					(.433)	(.178)
Control variables						
Gender (women)		.419*	.444**	.382*	.448**	.374*
		(.012)	(.007)	(.020)	(.006)	(.022)
Age		.012	.008	.007	.004	.008
		(.176)	(.368)	(.392)	(.604)	(.377)
Education		-.004	-.043	.024	-.019	.018
		(.948)	(.515)	(.724)	(.772)	(.786)
Meeting length			.001	.114	.088	.133
			(.950)	(.109)	(.202)	(.067)
Meeting facilitator lead			.128	.117	.135	.107

	Model 1	Model 2	Model 3	Model 4	Model 5
		(.138)	(.174)	(.177)	(.211)
Meeting size		-.063**	-.072**	-.072**	-.073**
		(.005)	(.001)	(.001)	(.001)
Perceived participant's relevance		.112	.121	.101	.094
		(.406)	(.359)	(.457)	(.479)
Meeting form					
Offline		-.552	-.512	-.482	-.469
		(.102)	(.122)	(.151)	(.156)
Hybrid		-.378	-.359	-.365	-.305
		(.223)	(.240)	(.239)	(.320)
R²	.062	.1451	.1739	.1553	.1820

Note: The dependent variable is *Perceived meeting effectiveness* in all the above models.

In the meeting form, dummy variables were created as variables with the online form as a reference variable.

P-values in parenthesis.

* $p < .05$

** $p < .01$

5.1 Post-Hoc Analyses

First, while women were not discriminated against in job position category ($F=.94; p=.33$) and were involved in the same characteristic tasks as men ($F=.83; p=.37$), we found that women operate within a shorter time horizon (see Table 4). This statement is supported by one-way ANOVA results ($F=6.72, p=.011$). Moreover, while we found the alignment between the employee's job position and the employee's time horizon (Model 6), we did not find any alignment between the employee's time horizon and meeting content (Model 7 + 8), which challenges stratified systems theory. Additionally, one-way ANOVA ($F=1.91, p=.115$) does not report any alignment between the employee's time horizon and task characteristics.

Table 4: Linear regression model for employee's time horizon

	Model 6	Model 7	Model 8
Gender (women)	-.445**	-.387*	-.298†
	(.003)	(.020)	(.057)
Age	.022**	.019*	-.002
	(.006)	(.023)	(.873)
Education	.112*	.161*	.158**
	(.049)	(.013)	(.009)
Meeting content		.089	.031
		(.316)	(.720)
Job position category			.399***
			(.000)
Pseudo R²			

Note: The dependent variable is the *employee's time horizon*.

P-values in parenthesis.

[†]<.1

* p<.05

** p<.01

***p<.001

6. Discussion

Primarily, this study contributes to the conversation searching for the relationship between the meeting content and meeting perceived effectiveness (Rogelberg *et al.*, 2006; Allen, Tong and Landowski, 2020), which has previously been neglected in research on workplace meetings. We studied how the employee's time horizon and the fit between meeting content and the employee's time horizon influence perceived meeting effectiveness. Although the hypotheses were not supported, we suggest that meeting content requires further attention. The results might be insignificant due to inconsistencies in stratified systems theory, to which we have to contribute.

First, while we found a fit between the employee's time horizon and job position category, we did not find a fit between the employee's time horizon and meeting content (characteristic task), nor did we find a fit between the meeting content and job position category. This finding challenges stratified systems theory, which may not be coherent with the recent business environment and context according to the globalisation and importance of fast responses in the last three decades. Consequently, the employee's time horizon, especially in higher strata, might not mirror the current state. Thus, we call for revising the alignment of characteristic tasks with employees' time horizons and job position categories. Second, many employees work in interdisciplinarity teams, and they have no strict characteristic tasks according to strata and there might be overlays between strata. Consequently, there is a need to determine whether the theory corresponds to practice and that there are no discrepancies.

Additionally, the data revealed interesting insights that drove the post-hoc analyses. The abductive approach brought further contributions concerning the differences between genders in the workplace. First, in previous studies, gender (women) has shown a non-significant effect on perceived meeting effectiveness (Leach *et al.*, 2009; Cohen *et al.*, 2011; Geimer *et al.*, 2015; Lehmann-Willenbrock, Allen and Belyeu, 2016). In contrast, our finding revealed gender as a significant predictor of perceived meeting effectiveness, whereas women perceive meetings as more effective. Second, even though women were not discriminated against in the job position category or the characteristic tasks of their job positions, they operate in a shorter time horizon. This finding could successfully drive the research on the role of women in management.

7. Limitations and Future Research

Our study has two limitations referring to the sample size. First, only seven organisations were included in the sampling, and the final sample comprised 96 respondents. Thus, more organisations across sectors should be included, and more participants should be involved for higher sample representativeness and findings generalisation. Second, the distribution of the job position category in the sample represented mostly strata I to IV. Stratum V had only one respondent, and strata VI to VII were not included. Thus, the results can be generalised with caution only for lower strata (I to IV).

Our findings also suggest that revisiting stratified systems theory is required. We propose that time horizons and characteristic tasks should be revised, with an emphasis on the fit between them. Including new forms of organising (Puranam, Alexy and Reitzig, 2014) could yield a fresh theory for the current context. Finally, the results open a space for a fruitful research inquiry into gender studies in management, for example on the role of women's time management in women's leadership styles (Burke and Collins, 2001; Shen and Joseph, 2021).

8. Conclusion

This study provides a perspective on workplace meetings based on stratified systems theory. We found no evidence that the employee's time horizon nor per se the fit between meeting content and the employee's time horizon influenced perceived meeting effectiveness. However, post-hoc analyses revealed important findings according to gender differences. Women operate within a shorter time horizon and perceive meetings as more effective. Finally, while we found the fit between the employee's time horizon and job position

category, we did not find the fit between the employee's time horizon and meeting content or the fit between meeting content and job position category, which challenges stratified systems theory.

Acknowledgement

Founding: This work was supported by IGS (grant number: IG632013)

References

- Allen, J.A. et al. (2012) 'Employees' feelings about more meetings: An overt analysis and recommendations for improving meetings', *Management Research Review*, 35(5), pp. 405–418. Available at: <https://doi.org/10.1108/01409171211222331>.
- Allen, J.A. et al. (2014) 'Understanding workplace meetings: A qualitative taxonomy of meeting purposes', *Management Research Review*, 37(9), pp. 791–814. Available at: <https://doi.org/10.1108/MRR-03-2013-0067>.
- Allen, J.A., Lehmann-Willenbrock, N. and Landowski, N. (2014) 'Linking pre-meeting communication to meeting effectiveness', *Journal of Managerial Psychology*, 29(8), pp. 1064–1081. Available at: <https://doi.org/10.1108/JMP-09-2012-0265>.
- Allen, J.A. and Rogelberg, S.G. (2013) 'Manager-led group meetings: A context for promoting employee engagement', *Group & Organization Management*, 38(5), pp. 543–569. Available at: <https://doi.org/10.1177/1059601113503040>.
- Allen, J.A., Tong, J. and Landowski, N. (2020) 'Meeting effectiveness and task performance: meeting size matters', *Journal of Management Development* [Preprint]. Available at: <https://doi.org/10.1108/JMD-12-2019-0510>.
- Beadle, R. and Knight, K. (2012) 'Virtue and meaningful work', *Business Ethics Quarterly*, 22(2), pp. 433–450. Available at: <https://doi.org/10.5840/beq201222219>.
- Burke, S. and Collins, K.M. (2001) 'Gender differences in leadership styles and management skills', *Women in Management Review*, 16(5), pp. 244–257. Available at: <https://doi.org/10.1108/09649420110395728>.
- Christian, M.S., Garza, A.S. and Slaughter, J.E. (2011) 'Work engagement: A quantitative review and test of its relations with task and contextual performance', *Personnel Psychology*, 64(1), pp. 89–136. Available at: <https://doi.org/10.1111/j.1744-6570.2010.01203.x>.
- Cohen, M.A. et al. (2011) 'Meeting design characteristics and attendee perceptions of staff/team meeting quality', *Group Dynamics: Theory, Research, and Practice*, 15(1), pp. 90–104. Available at: <https://doi.org/10.1037/a0021549>.
- Elsayed-Elkhouly, S.M., Lazarus, H. and Forsythe, V. (1997) 'Why is a third of your time wasted in meetings?', *Journal of Management Development*, 16(9), pp. 672–676.
- Espinosa, J.A., Lerch, F.J. and Kraut, R.E. (2004) 'Explicit versus implicit coordination mechanisms and task dependencies: One size does not fit all.', in E. Salas and S.M. Fiore (eds) *Team cognition: Understanding the factors that drive process and performance*. Washington: American Psychological Association, pp. 107–129. Available at: <https://doi.org/10.1037/10690-006>.
- Geimer, J.L. et al. (2015) 'Meetings at work: Perceived effectiveness and recommended improvements', *Journal of Business Research*, 68(9), pp. 2015–2026. Available at: <https://doi.org/10.1016/j.jbusres.2015.02.015>.
- Hackman, J.R. and Morris, C.G. (1975) 'Group tasks, group interaction process, and group performance effectiveness: A review and proposed integration', *Advances in experimental social psychology*, 8, pp. 45–99. Available at: [https://doi.org/10.1016/S0065-2601\(08\)60248-8](https://doi.org/10.1016/S0065-2601(08)60248-8).
- Heckathorn, D.D. (2011) 'Comment: Snowball versus respondent-driven sampling', *Sociological methodology*, 41(1), pp. 355–366.
- Heckathorn, D.D. and Cameron, C.J. (2017) 'Network sampling: From snowball and multiplicity to respondent-driven sampling', *Annual review of sociology*, 43, pp. 101–119.
- James, H.S. (2006) 'Self-selection bias in business ethics research', *Business Ethics Quarterly*, 16(4), pp. 559–577.
- Jaques, E. (1986) 'The development of intellectual capability: A discussion of stratified systems theory', *The Journal of applied behavioral science*, 22(4), pp. 361–383.
- Jaques, E. (2016) *Requisite organization: A total system for effective managerial organization and managerial leadership for the 21st century*. 2. Routledge.
- Jaques, E. (2020) '50 Thoughts about Leadership and People Systems', *ROI Requisite*, 6 March. Available at: <https://www.requisite.org/50-thoughts-about-leadership-and-people-systems/> (Accessed: 12 June 2023).
- Jaques, E., Bygrave, C. and Lee, N. (2001) 'Aligning multiple time horizons and multiple functions in strategic planning and budgeting', *The International Journal of Organizational Analysis*, 9(3), pp. 257–271. Available at: <https://doi.org/10.1108/eb028935>.
- Jarzabkowski, P. and Seidl, D. (2008) 'The role of meetings in the social practice of strategy', *Organization Studies*, 29(11), pp. 1391–1426. Available at: <https://doi.org/10.1177/0170840608096388>.
- Jett, Q.R. and George, J.M. (2003) 'Work interrupted: A closer look at the role of interruptions in organizational life', *Academy of management Review*, 28(3), pp. 494–507.
- Kauffeld, S. and Lehmann-Willenbrock, N. (2012) 'Meetings matter: Effects of team meetings on team and organizational success', *Small group research*, 43(2), pp. 130–158. Available at: <https://doi.org/10.1177/1046496411429599>.
- Köhler, T., Cramton, C.D. and Hinds, P.J. (2012) 'The meeting genre across cultures: Insights from three German–American collaborations', *Small Group Research*, 43(2), pp. 159–185. Available at: <https://doi.org/10.1177/1046496411429600>.

- Král, P., Králová, V. and Šimáček, P. (2023) 'The impact of interactions before, during and after meetings on meeting effectiveness: a coordination theory perspective', *Measuring Business Excellence* [Preprint].
- Leach, D.J. et al. (2009) 'Perceived meeting effectiveness: The role of design characteristics', *Journal of Business and Psychology*, 24(1), pp. 65–76. Available at: <https://doi.org/10.1007/s10869-009-9092-6>.
- Lehmann-Willenbrock, N., Allen, J.A. and Belyeu, D. (2016) 'Our love/hate relationship with meetings: Relating good and bad meeting behaviors to meeting outcomes, engagement, and exhaustion', *Management Research Review*, 39(10), pp. 1293–1312. Available at: <https://doi.org/10.1108/MRR-08-2015-0195>.
- Luong, A. and Rogelberg, S.G. (2005) 'Meetings and more meetings: The relationship between meeting load and the daily well-being of employees.', *Group Dynamics: Theory, Research, and Practice*, 9(1), pp. 58–67. Available at: <https://doi.org/10.1037/1089-2699.9.1.58>.
- Mosvick, R.K. and Nelson, R.B. (1987) *We've got to start meeting like this: a guide to successful business meeting management*. Scott Foresman Trade.
- Mroz, J.E., Schreiner, E. and Allen, J.A. (2020) 'Formal leadership in workplace meetings', in *Managing Meetings in Organizations*. Emerald Publishing Limited.
- Nickerson, J.A. and Silverman, B.S. (2003) 'Why firms want to organize efficiently and what keeps them from doing so: Inappropriate governance, performance, and adaptation in a deregulated industry', *Administrative Science Quarterly*, 48(3), pp. 433–465. Available at: <https://doi.org/10.2307/3556680>.
- Okhuysen, G.A. and Bechky, B.A. (2009) '10 coordination in organizations: An integrative perspective', *Academy of Management Annals*, 3(1), pp. 463–502. Available at: <https://doi.org/10.5465/19416520903047533>.
- Puranam, P., Alexy, O. and Reitzig, M. (2014) 'What's "new" about new forms of organizing?', *Academy of Management Review*, 39(2), pp. 162–180. Available at: <https://doi.org/10.5465/amr.2011.0436>.
- Rogelberg, S.G. et al. (2006) "'Not another meeting!' Are meeting time demands related to employee well-being?", *Journal of Applied Psychology*, 91(1), pp. 83–96. Available at: <https://doi.org/10.1037/0021-9010.91.1.83>.
- Rogelberg, S.G., Shanock, L.R. and Scott, C.W. (2012) 'Wasted time and money in meetings: Increasing return on investment', *Small Group Research*, 43(2), pp. 236–245. Available at: <https://doi.org/10.1177/1046496411429170>.
- Sætre, A.S. and Van de Ven, A. (2021) 'Generating theory by abduction', *Academy of Management Review*, 46(4), pp. 684–701.
- Shanock, L.R. et al. (2013) 'Less acting, more doing: How surface acting relates to perceived meeting effectiveness and other employee outcomes', *Journal of Occupational and Organizational Psychology*, 86(4), pp. 457–476. Available at: <https://doi.org/10.1111/joop.12037>.
- Shen, W. and Joseph, D.L. (2021) 'Gender and leadership: A criterion-focused review and research agenda', *Human Resource Management Review*, 31(2), p. 100765. Available at: <https://doi.org/10.1016/j.hrmr.2020.100765>.
- Taber, T.D. and Alliger, G.M. (1995) 'A task-level assessment of job satisfaction', *Journal of Organizational Behavior*, 16(2), pp. 101–121.
- Tobia, P.M. and Becker, M.C. (1990) 'Making the most of meeting time', *Training & Development Journal*, 44(8), pp. 34–39.
- Volkema, R.J. and Niederman, F. (1995) 'Organizational meetings: Formats and information requirements', *Small group research*, 26(1), pp. 3–24.
- Yoerger, M., Allen, J.A. and Crowe, J. (2018) 'The impact of premeeting talk on group performance', *Small Group Research*, 49(2), pp. 226–258.

Developing Capabilities for Sustainable Business Models: Exploring Project Maturity for Innovation Processes

Torgeir Skyttermoen¹ and Gunhild Wedum²

¹Oslo Business School, Oslo Metropolitan University, Norway

²Inland School of Business, Inland Norway University of Applied Sciences, Norway

torsky@oslomet.no

gunhild.wedum@inn.no

Abstract: Companies must cultivate new dynamic capabilities to meet the demands for sustainable solutions in an uncertain and dynamic world. This longitudinal case study explores the significance of project maturity as a critical capability within complex innovation processes for developing sustainable business models. The purpose of the study is to gain a better understanding of the central factors companies encounter when making efforts to build sustainable business models through innovation projects. Tracking a market-leading company's journey from ideation to implementation over an extended period, this study focuses on creating a sustainable business emphasising waste reduction, heightened customer satisfaction, and profitability. Key insights emerge through qualitative methods, including interviews, observations, and document analysis. The findings highlight the pivotal role of project maturity in innovation projects centred around sustainable value propositions. Project maturity is salient in creating an autonomous unit, fostering agility, and promoting open collaboration. It encompasses organisational ambidexterity and collaborative engagement with vital stakeholders. Furthermore, proficient project managers well-versed in agile project management and innovation processes and contextual resolution emerge as crucial drivers in innovation projects aimed at developing capabilities for sustainable business models. By tailoring project maturity to the specific needs of each project and integrating agile methodologies, organisations can forge the necessary capabilities for crafting sustainable business models. Additionally, dynamic capabilities can be cultivated by aligning projects with the overall business strategy and implementing practices that facilitate continuous learning and improvement. This study underscores the importance of project maturity within innovation processes and its role in creating profitable and sustainable business models by developing new dynamic capabilities. The research findings offer valuable insights for businesses seeking to design effective innovation processes supporting sustainable business model realization.

Keywords: Dynamic capability, Sustainability, Project maturity, Innovation process, Project management, Business model innovation

1. Introduction: Innovations in the Age of Sustainability

Sustainability has become a pressing concern for business leaders, necessitating the development of sustainable solutions within. However, integrating sustainability goals into business operations is challenging, often requiring extensive innovation projects and new business models (Bocken et al., 2016; Bocken et al., 2022). These projects involve uncertainty, experimentation, and the need for resource allocation while maintaining profitability. Effectively, innovation processes to balance operations and innovation are crucial but challenging (Davies & Hobday, 2005; Shenhar & Dvir, 2007). One approach is creating separate units for innovative innovation projects, known as ambidextrous units or two-handed solutions (O'Reilly & Tushman, 2008).

While necessary, more than the effective organization of innovation projects is needed for fostering innovations. Instead, project maturity, signifying the organization's capacity and readiness to deploy suitable tools and expertise, becomes paramount. (Clegg et al., 2020; Gemünden et al., 2018). Sustainable value proposition development often benefits more from agile, open approaches rather than traditional, sequential ones (Serrador & Pinto, 2015; Silvius & Schipper, 2022). The project format aligns well with tackling pressing sustainability issues (Silvius & Schipper, 2014). This necessitates adaptive project maturity, adjusting tools and approaches to fit the conditions of innovation projects. While project maturity has been studied (Mullaly, 2014), its exploration of innovation processes for creating sustainable value propositions is less frequent (Inigo et al., 2017). Hence, sound project management becomes crucial due to uncertainty and the need for agile methods that demand autonomy and adaptability (Denning, 2017; Hill, 2014).

Using a longitudinal case study, we have followed an innovation process in a large market-leading company (see Figure 1).¹ Aiming to solve the wicked problem of reducing the use of single-use packaging, simultaneously delivering increased value to customers, solving infrastructure challenges, and being profitable. The implemented solution involves a transformation from in-store retail products to an on-demand service delivered

¹A preliminary examination of this case study has been conducted and published by us as authors in Norwegian: Skyttermoen & Wedum (2020). Bærekraftige forretningsmodeller og prosjektmodenhet i innovasjonsprosjekter. Magma Vol. 23 (7)

directly to customers' homes, facilitated by digital scanning for ordering and refilling. Our focus is to identify key project-related components crucial for resolving this challenge. As a single-case in-depth approach, our study aims to elucidate in more detail: *How is project maturity expressed in an innovation process where sustainable business models are innovated?*

Company Case:

- The company specializes in managing brands and consumer-focused enterprises. Structured as a divisional model, it oversees 12 distinct portfolio companies, collectively employing over 20,000 people.
- While its primary operations are located in the Nordic countries, it has expanded its reach to include the Baltic nations and India. Navigating a fiercely competitive landscape, the company continually adapts to evolving customer preferences by enhancing its product offerings and pioneering innovative solutions.
- The company has sustainability as one of its core values, putting efforts to pursue long-term sustainability goals. The company established an innovation project intending to reduce plastic packaging to meet sustainability challenges. This has resulted in, among other things, a circular refill service that helps you reduce the amount of plastic waste while you always have access to the household items you need every day. They deliver the products to your door and pick them up when it's time to refill. During the project, one digital company and one strategic consultancy company were involved and eventually organized as a mutual venture.

Figure 1: Brief presentation of case company and context

Through our findings, we contribute to better comprehending the essential conditions that drive innovation processes leading to sustainable solutions, enabling us to gain insights into the tools necessary for organizing and leading innovation projects. Specifically, we examine the significance of organizational maturity as a dynamic capability for shaping project forms while implementing innovation processes.

To achieve sustainable innovations in businesses, several vital factors exist. We will first briefly address the topics of sustainable business models and innovation processes. Using a longitudinal case study, we will explain the methodological approach following an innovation project from ideation to implementation. We present and analyse some of the findings against central elements for project maturity. In conclusion, we will discuss proposals for further research and practical implications.

2. Innovation and Implementation of Sustainable Business Models

Certain key conditions must be considered to implement innovation projects for sustainable business models successfully. Understanding the complexity and ambiguity of processes involved in addressing new challenges and improvements requires a multidisciplinary approach (Alvesson & Sandberg, 2014; Davies et al., 2018; March, 1996). Integrating sustainability goals and creating value for shareholders adds another dimension. Various disciplines contribute different perspectives, terms, and focuses. Strategy research emphasizes dynamic capabilities and business models, while innovation project research encompasses various processes for developing new solutions. Traditionally focused on planning and control, project management as a field of study has expanded its scope, including innovation (Davies et al., 2018). This article does not aim to merge and cross-fertilize. Instead, we apply concepts and knowledge from various fields of study in our approach.

2.1 Innovation and Sustainable Business Models

Innovation processes can be *exploitative*, involving minor improvements and better utilization of existing processes or products, or *explorative*, bringing about extensive changes and exploring entirely new products or processes (March, 1991; Petro et al., 2019). Our case involves an explorative innovation through the emergence of a new business model. While extensive research has been conducted on innovation processes, the focus has primarily been on product elements rather than co-creation with customers and other stakeholders (Lusch & Nambisan, 2015; Vargo & Lusch, 2004). Many offerings in the market today combine products and services, which has implications for innovation (Rubalcaba et al., 2012).

Businesses face pressure to innovate and adapt their business models in response to sustainability, technology, and customer preferences (Jørgensen & Pedersen, 2018). Transforming value propositions to be sustainable can

be extensive and requires further research (Bocken et al., 2016). The value proposition, a central element of the business model, involves offering solutions that address customer needs (Osterwalder & Pigneur, 2010; Osterwalder et al., 2015). Transforming value propositions to be sustainable can be extensive and requires further research (Bocken et al., 2016; Morioka et al., 2017). Sustainable value propositions differ significantly from previous concepts offered to customers.

For businesses to thrive, they must possess the relevant capabilities to adapt. *Dynamic capabilities* involve purposefully creating, extending, or modifying resources to address rapidly changing environments (Helfat et al., 2007; Teece, 2017). Within dynamic capabilities project management plays a role in innovation projects as part of an organization's dynamic capabilities (Hernando & Martín-Cruz, 2020). *Project capability* refers to the knowledge, experience, and skills required for project-related activities, while project maturity encompasses the use of knowledge, skills, tools, and techniques to meet project requirements (Davies & Hobday, 2005). In the literature, the term project capability has primarily been applied to describe large technical projects, while project maturity is traditionally related to large project-based organizations (Kerzner, 2019). They are closely related; however, we will use project maturity as a term here. As a form of dynamic capability, project maturity entails having a large toolbox and reflective use of project management processes based on situational requirements (Clegg et al., 2020; Gorog, 2016). Projects involving explorative innovation often require a degree of autonomy to succeed (Shenhar & Dvir, 2007). Such projects have many aspects. In our case, we have taken a closer look at two aspects of project maturity with a view to the appropriate organization: *project organizational maturity* and the importance of *project manager maturity*. Project organizational maturity means that the organization has insight into which organizational arrangements are appropriate for using projects as a method for change and innovation processes that the business initiates and implements.

Our study examines two aspects of project maturity related to an appropriate organization: project organizational maturity and project leader maturity. *Project organizational maturity* refers to an organization's understanding of suitable organizational arrangements for using projects as a method for change and innovation. *Organizational ambidexterity*, which involves refining existing products and creating new units, is crucial for handling increased customer demands and competition, particularly in the context of sustainable business models and the circular economy (Chari et al., 2022; O'Reilly & Tushman, 2013; O'Reilly & Tushman, 2008; Petro et al., 2019). Organizational ambidexterity involving a transition to more sustainable business models and a circular economy has been relatively little studied in the project literature, and more studies are called to deal with how this happens in businesses (Turner et al., 2015).

In the context of agile innovation projects, the role of a project leader is typically pivotal to the project's overall success (Gemino et al., 2021). The term '*project leader maturity*' encapsulates how a project leader employs their skills, utilizes relevant tools, and applies methodologies in a manner sensitively attuned to the current situation. This involves a reflective practice contributing significantly towards effective implementation and support for the project. Leading innovation processes necessitates a mastery over managing complexities and ambiguities while simultaneously fostering an environment conducive to learning (Hill et al., 2014). Generally, the role of a project leader in innovation projects is accompanied by substantial expectations. The efficacy of a project leader is often seen to correlate with the project's ultimate success (Cooke-Davies, 2002; Pinto & Slevin, 1989). It is, therefore, crucial to understand that the role of a project leader extends beyond just managing tasks. It involves an adaptive approach that tailors strategies to the project's specific needs and conditions while ensuring the innovation process's dynamic development.

3. Method

To gain a deeper understanding of the development of sustainable business models, we have employed longitudinal case studies as our research method (Langley, 1999). Such studies offer the opportunity for in-depth exploration, which is crucial for advancing knowledge in this area (Flyvbjerg, 2006; Yin, 2014). As highlighted by Eisenhardt (1989), case studies are particularly well-suited for illuminating and generating insights about new phenomena, enabling a thorough examination of the subject matter. This article emerges from an ongoing research project conducted in collaboration with a selected company known for its involvement in various innovation processes.

The project we have focused on addresses the significant challenge of plastic issues and is organized as a separate unit within the case company, a market leader in the retail industry specializing in soap and cleaning products. The company continually introduces new concepts and expands its product lines for existing brands,

strongly emphasizing sustainability. As a result, several new concepts have been launched to minimize the environmental footprint compared to other product lines.

Our case study is grounded in the theoretical framework of how sustainable business model innovation is carried out and organized at the micro level, specifically focusing on developing or improving value propositions. Various methodologies have been implemented throughout the innovation process, including different forms of insight studies, service design, design sprints, and business modelling. Each phase involved continuous development, prototyping, testing, and adjustments, all aimed at finding alternative solutions to reduce the use of single-use packaging. The innovation project addresses the complex challenges associated with plastic packaging in household products, aiming to offer smart, simple, and sustainable alternatives that render disposable packaging unnecessary. Merely adopting environmentally friendly packaging, such as recyclable plastic, is deemed insufficient, necessitating a shift towards a more circular business model.

To comprehensively capture the innovation process, we have longitudinally followed its evolution, as depicted in Figure 2. Our data collection involved interviews, observations, and document studies, serving as the primary sources (see Table 1). Eisenhardt (1989) stresses the suitability of longitudinal case studies for investigating the emergence of new phenomena, such as sustainable business models. Figure 2 and Table 1 provide an overview of the data on which this study is based. Participants in the project have used different methodologies in the process of innovating the concept, including service design and business modelling. Service design maps how the service is experienced by the user and for those who deliver the service (Bason, 2018). This means looking at how products, people and systems interact. Central elements in service design are user involvement, idea development, prototyping and testing. In the innovation process, the company used a set of different types of methodologies; they interviewed households about their use of cleaning products. Conducted several workshops where various concepts were developed and tested. Prototypes of the service were made, which were tested in use at the household, and changes were made based on input from the user. The new innovation required a completely new business model, and to solve it, a new company was established. A pre-launch of the concept was also carried out before a full-scale launch.

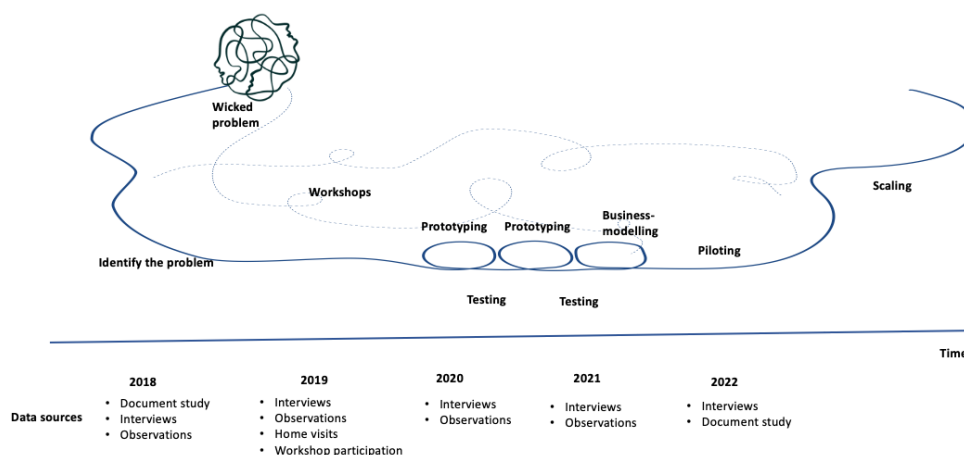


Figure 2: An overview of the main events in the innovation process. The timeline illustrates phases in the innovation process and for data collection and sources

Table 1: Empirical foundation for the case

Interviews	Observations	Reviewed Documents
- Business Developer Sustainable Living - Leader New Businesses Innovation - Innovation Manager Growth Accelerator - Nordic Marketing Director - Sustainability Innovation Manager	- workshop participation - introductory workshop on evaluation proposals - business modelling - service design	- insight studies - review and interviews - with drivers of so-called Zero Waste stores - strategy documents - process tools for innovation processes

Interviews	Observations	Reviewed Documents
		– communication material - material from a workshop

4. Findings

In our study, we have investigated the role of organizational project maturity in innovation projects that aim to generate environmentally conscious value propositions. Our case study underscores the vital importance of project maturity. Here, we will concentrate on two aspects: 1) the organization of the innovation project and 2) the project leader's role.

4.1 Organizational Project Maturity

Our subject company plans to transition from a linear to a circular business model. This innovation project is housed within a specialized innovation unit, using an agile approach. This configuration displays a shift from an integrated to a separate innovation project, from a closed to an open innovation process, and from a sequential to an agile approach.

4.1.1 Organizational autonomy

Unencumbered by operational activities, an autonomous department was created to handle this innovation project. The project unit operates under the company's sustainability strategy, enjoying substantial freedom to develop and execute the project. The company maintains several innovation projects, but they are organized within existing structures, reflecting an exploitative approach. Many organizations operate with such ambidextrous structures (Kumkale, 2022; O'Reilly & Tushman, 2011). The following quote from the study can illustrate the advantage of this organization:

"In projects like this, it is important to broaden one's perspective and not be bound by the existing business model. One must be able to explore new thoughts and ideas, which may appear highly radical to someone solely focused on the company's daily operations."

4.1.2 Collaboration and partnership

Despite the company's history of insular innovation processes, the development of sustainable value propositions led to collaborations with vital stakeholders. Recognizing the need for multifaceted inputs due to the project's considerable uncertainties, the company integrated various actors into the process, including research environments, suppliers, and other partners. As a result, the processes became more complex, increasing uncertainty but potentially leading to superior solutions. More fundamentally, they have committed two essential partners in the separate innovation unit as equal partners. Such involvement requires a willingness to open up to others and thereby provide transparency into ongoing processes within the organization. This often leads to more complex processes with numerous inputs and elements that need to be incorporated into the project, which, in turn, can result in a higher degree of uncertainty during implementation. At the same time, it can lead to much better solutions. Our data indicates that the project team has valued external actors' participation, interference, and contributions, especially the established committed partnership. The project leader expresses the importance of complementary expertise in the following way: *"All parties contribute to the collaboration with their unique competence and 'toolbox,' which, in the aggregate, provides a high level of execution capability in the project."*

4.1.3 Agile project approaches

The company uses various innovation tools in their processes, with a preference for agile strategies for this project. Traditional sequential strategies were deemed inadequate for this kind of innovation (Serrador & Pinto, 2015). An agile strategy allows for the evolution of the solution and the approach, promoting customer focus and iterative development. Furthermore, agile project execution strategies are characterized by a more robust customer focus, which has also been central in this process. It has required experimentation with different solutions through short iterations and solutions that further development has built upon (Binci et al., 2023). As the Sustainability Innovation Manager stated:

"Early in this project, we realized we needed inspiration and expertise from actors outside the company. Therefore, we must have an open dialogue with others who have the potential to find alternatives to the current consumption model."

4.2 Project Leader Maturity

The project leader's role has been accentuated as critical in executing innovation projects promoting sustainable value propositions. Sustainable innovations necessitate novel work approaches, with the project leader's maturity significantly influencing the project's success (Müller & Turner, 2010). Project leader maturity encompasses many components and dimensions.

The realization of this type of value proposition requires a different form of collaboration than a simple purchase in a store does. The implementation of technology is central to being able to innovate circular value propositions.

«We have both a responsibility and an opportunity to do something about the sustainability problem. New technology can be implemented to meet the needs of the consumer. We can deliver value while at the same time being able to turn our operation into a more sustainable situation which means that we get a more sustainable business model». Sustainability Innovation Manager

Working methods to bring about innovation are central to arriving at radical innovations. The informants believe it requires a new way of working in the innovation process.

«I think that the problem we have requires such a release from our usual projects, and then I think that it is wrong to have very defined processes. We have worked a lot with hypotheses and sought how to solve them». Sustainability Innovation Manager

Here, we will particularly emphasize the following two dimensions: *innovative agility* and *contextual resolution*.

4.2.1 Innovative agility

Innovation processes and project implementation are closely intertwined phenomena, and it is important to understand them. Based on the data from the case study, it is evident that it is crucial for the project leader to have insights into project-related components such as implementation strategies, project organization, and application of various methodologies. Particularly in a more agile implementation, where there should be multiple learning loops with customer focus, collaboration with external stakeholders, and experimentation, it is essential to adapt project management methods in a customized manner (Funke et al., 2023; Pinto & Slevin, 1989). The dimension of *innovative agility* implies understanding, using various methods, and applying agile approaches for developing new value propositions and business models. Failure to be able to learn and improve is central to all innovation processes.

Our case company has been at the forefront of brand building and innovation in the grocery retail industry. However, it has been necessary to think entirely differently to address growth in new channels, service growth, digitization, and sustainability. The project leader has been particularly attentive to the central role of applying project and process methodologies in a customized manner and customized suitable implementation. The informants we interviewed in the case company emphasize the importance of acquiring process competence within the company and assessing when and for which tasks different methodologies and tools are appropriate.

“But we need to choose someone who knows the process so that we can gain competence ourselves. That way, we can do it ourselves. I also thought about that with the Sprint methodology. The company has verified it and made it their own. They have brought in and seen what works and what does not. I mix methodologies and adapt them to the problem that needs to be solved.” Leader New Business Innovation

4.2.2 Contextual resolution

Innovating new sustainable value propositions requires entirely new ways of working. For innovation projects, the project is given a mandate developed based on a strategy, but the project mandate remains open to change. The active role of the project leader has been crucial. The dimension of *contextual resolution* implies the ability to transform future needs into new value propositions. Understanding conditions for creating value for projects, including business acumen, building networks with salient stakeholders, and a fundamental understanding of organizational processes are characteristics included in this dimension.

The informants emphasize that in an innovation process, it is crucial for the project team members to be critical of the mandate they receive and consider it as a sketch for the job to be done. The experience from the case company aligns with previous research indicating that culture should be based on speed and agility, and employees must dare to take risks and experiment (Binci et al., 2023; Conforto et al., 2016). The project leader and others involved are firmly committed to reducing the company's environmental footprint. Personal

commitment to sustainability from both the project leader and other project/department members has been crucial. Innovation projects are characterized by uncertainty regarding approaches and potential solutions. In such cases, the project leader needs to have a contagious level of engagement that influences team members, a well-founded understanding of the context and actively involves external collaborators while also receiving continued support from the client (Silvius & Schipper, 2020).

“Working on such a fundamental issue as challenging the consumption model is energizing. Many stakeholders, with great enthusiasm, see the potential for thinking differently, particularly regarding the circular economy. This quickly leads to exciting collaboration opportunities.” Leader New Business Innovation

The central components of project maturity for innovating sustainable value propositions can be summarised and visualized in Figure 3.



Figure 3: Project Maturity and essential components for innovation sustainable business models

5. Discussion: Project Maturity Promoting Innovation of Sustainable Business Models

Our analysis suggests that dedicated project units tasked with explorative innovations should possess significant organizational autonomy. This aligns with the concept of an ambidextrous organization where a dedicated unit can focus on a novel business model's development (Pellegrinelli et al., 2015; Petro et al., 2019). However, separating this unit might pose challenges, potentially reducing the project's connection to the broader organization and disrupting regular production (Binci et al., 2023; Gann et al., 2012). Project units might thrive in prosperous economic conditions but could also be vulnerable to economic changes, particularly when results are delayed. Thus, establishing these units necessitates organizational and managerial understanding and commitment, reinforcing project maturity as part of dynamic capabilities for sustainable business model development. Even though environmental sustainability is increasingly vital in decision-making and innovation project implementation, many companies still overlook this aspect (Silvius & Schipper, 2022). To truly innovate sustainable solutions, sustainability must be integrated from the project's inception rather than as an afterthought.

Our case also underscores the project leader's pivotal role. They should perform innovation agility and contextual resolution. The crucial nature of this role can make it both impactful and vulnerable, especially when replacement becomes necessary. To mitigate this risk, thorough information and knowledge sharing within the project team and the larger organization is crucial (Bredillet et al., 2015).

Moreover, the case company demonstrated that a willingness to experiment, organizational autonomy, and agile project management are crucial for innovating sustainable business models. In addressing complex challenges, trial and error, open collaboration, and agility are indispensable. In summary, our analysis of the empirical data uncovers multiple essential components for the successful implementation of innovation projects. Figure 4 visually represents these elements, emphasising project maturity's role in developing dynamic capabilities for sustainable business models.

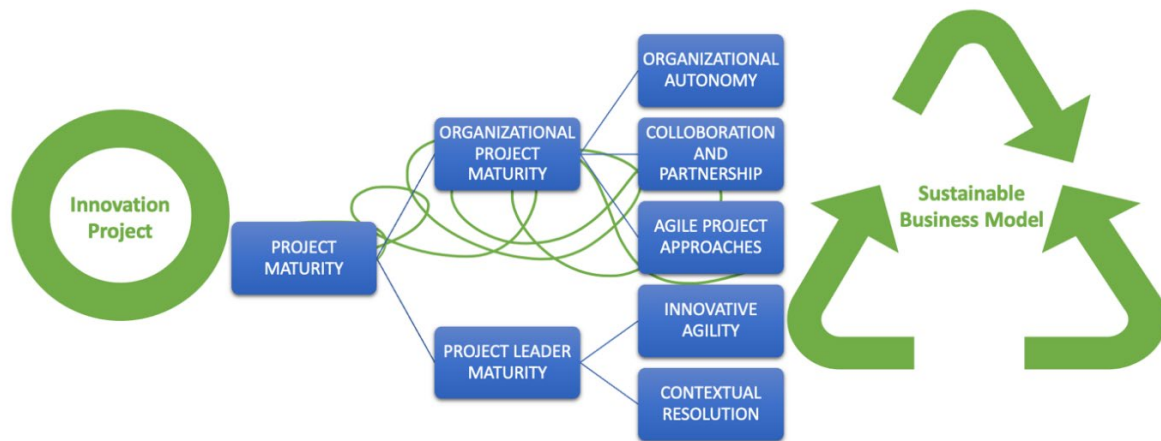


Figure 4: Project maturity in innovation projects. Central components

6. Conclusion – Limitations and Practical Implications

This case study underscores the critical role of project maturity in fostering dynamic capabilities for sustainable innovation. Focusing on a single innovation project, from inception to execution, has revealed promising insights into sustainable and profitable business model development. Still, the study's limitation lies in its singularity, making broad generalisations difficult. Using a single longitudinal case study provides an opportunity for in-depth insight but limits generality for other cases. Despite this, our findings echo other research across various fields, attesting to their potential relevance.

The complexity of cultivating dynamic capabilities for sustainability and profitability could benefit from interdisciplinary perspectives, including innovation studies, project management, and strategic approaches such as dynamic capability and business model innovation (Chari et al., 2022; Davies et al., 2018). We thus advocate for further research into project maturity as a dynamic capability for crafting sustainable business models.

Our study offers key insights for organizations aiming to develop sustainable business models through substantial innovation. It reaffirms prior research, emphasising the importance of autonomy, experimentation, and a degree of organizational decoupling for successful innovation. Unravelling new solutions invites considerable uncertainty and necessitates multi-stakeholder collaboration, underscoring the value of open, agile approaches for successful sustainable transformation. Traditional economic models, focusing on profit maximisation and hierarchical structures, could pose challenges in implementing agile innovation processes aimed at achieving sustainable yet profitable solutions. Notably, our study identifies the project leader's maturity—characterised by innovative agility and contextual resolution—as a critical success factor in these innovation processes.

In conclusion, organizations striving towards greener, circular economies via innovative projects should prioritise enhancing their project maturity as part of developing dynamic capabilities. Simultaneously, they must be equipped to navigate these transformative processes' inherent complexities and uncertainties. This study thereby contributes to a more comprehensive understanding of the key factors companies face when endeavouring to innovate sustainable business models.

References

- Alvesson, M., & Sandberg, J. (2014). Habitat and Habitus: Boxed-in versus Box-Breaking Research. *Organization studies*, 35(7), 967-987.
- Bason, C. (2018). *Leading public sector innovation : co-creating for a better society* (Second edition. ed.). Policy Press.
- Binci, D., Cerruti, C., Masili, G., & Paternoster, C. (2023). Ambidexterity and Agile project management: an empirical framework. *The TQM Journal*, 35(5), 1275-1309.
- Bocken, N. M. P., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 33(5), 308-320.
- Bocken, N. M. P., Harsch, A., & Weissbrod, I. (2022). Circular business models for the fastmoving consumer goods industry: Desirability, feasibility, and viability. *Sustainable Production and Consumption*, 30, 799-814.
- Bredillet, C., Tywoniak, S., & Dwivedula, R. (2015). What is a good project manager? An Aristotelian perspective. *International Journal of Project Management*, 33(2), 254-266.

- Chari, A., Niedenzu, D., Despeisse, M., Machado, C. G., Azevedo, J. D., Boavida-Dias, R., & Johansson, B. (2022). Dynamic capabilities for circular manufacturing supply chains—Exploring the role of Industry 4.0 and resilience. *Business Strategy and the Environment*, 31(5), 2500-2517.
- Clegg, S. R., Skyttermoen, T., & Vaagaasar, A. L. (2020). *Project Management : a Value Creation Approach*. SAGE Publishing.
- Conforto, E. C., Amaral, D. C., Da Silva, S. L., Di Felippo, A., & Kamikawachi, D. S. L. (2016). The agility construct on project management theory. *International Journal of Project Management*, 34(4), 660-674.
- Cooke-Davies, T. (2002). The “real” success factors on projects. *International Journal of Project Management*, 20(3), 185-190.
- Davies, A., & Hobday, M. (2005). *The business of projects: managing innovation in complex products and systems*. Cambridge University Press.
- Davies, A., Manning, S., & Söderlund, J. (2018). When neighboring disciplines fail to learn from each other: The case of innovation and project management research. *Research policy*, 47(5), 965-979.
- Denning, S. (2017). The age of Agile. *Strategy & Leadership*, 45(1), 3-10.
- Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *The Academy of Management review*, 14(1), 57-74.
- Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, 12(2), 219-245.
- Funke, A., Wilden, R., & Gudergan, S. (2023). Only senior managers lead business model innovation, or do they? Levels of management and dynamic capability deployment. *Industrial Marketing Management*, 114, 181-195.
- Gann, D., Salter, A., Dodgson, M., & Phillips, N. (2012). Inside the World of the Project Baron. *MIT Sloan Management Review*, 53(3), 63-71.
- Gemino, A., Horner Reich, B., & Serrador, P. M. (2021). Agile, Traditional, and Hybrid Approaches to Project Success: Is Hybrid a Poor Second Choice? *Project Management Journal*, 52(2), 161-175.
- Gemünden, H. G., Lehner, P., & Kock, A. (2018). The project-oriented organization and its contribution to innovation. *International Journal of Project Management*, 36(1), 147-160.
- Gorog, M. (2016). A broader approach to organisational project management maturity assessment. *International Journal of Project Management*, 34(8), 1658-1669.
- Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D. J., & Winter, S. G. (2007). Dynamic capabilities: foundations. *Dynamic capabilities: Understanding strategic change in organizations*, 30-45.
- Hermano, V., & Martín-Cruz, N. (2020). The Project-Based Firm: A Theoretical Framework for Building Dynamic Capabilities. *Sustainability (Basel, Switzerland)*, 12(16), 6639.
- Hill, L. A. (2014). *Collective genius : the art and practice of leading innovation*. Harvard Business School Press.
- Hill, L. A., Brandeau, G., Sal, E. T., & Lineback, K. (2014). Collective Genius [Article]. *Harvard Business Review*, 92(6), 94-102.
- Inigo, E. A., Albareda, L., & Ritala, P. (2017). Business model innovation for sustainability: exploring evolutionary and radical approaches through dynamic capabilities. *Industry and innovation*, 24(5), 515-542.
- Jørgensen, S., & Pedersen, L. J. T. (2018). *RESTART sustainable business model innovation*. Palgrave Macmillan.
- Kerzner, H. (2019). *Innovation project management : methods, case studies, and tools for managing innovation projects* (1st edition. ed.). Wiley.
- Kumkale, İ. (2022). Organizational Ambidexterity. In İ. Kumkale (Ed.), *Organizational Mastery: The Impact of Strategic Leadership and Organizational Ambidexterity on Organizational Agility* (pp. 1-22). Springer.
- Langley, A. (1999). Strategies for Theorizing from Process Data. *The Academy of Management review*, 24(4), 691-710.
- Lusch, R. F., & Nambisan, S. (2015). Service Innovation: A Service-Dominant Logic Perspective. *MIS quarterly*, 39(1), 155-176.
- March, J. G. (1991). Exploration and Exploitation in Organizational Learning [Article]. *Organization Science*, 2(1), 71-87.
- March, J. G. (1996). Continuity and Change in Theories of Organizational Action. *Administrative science quarterly*, 41(2), 278-287.
- Morioka, S. N., Bolis, I., Evans, S., & Carvalho, M. M. (2017). Transforming sustainability challenges into competitive advantage: Multiple case studies kaleidoscope converging into sustainable business models. *Journal of cleaner production*, 167, 723-738.
- Mullaly, M. (2014). If maturity is the answer, then exactly what was the question? *International journal of managing projects in business*, 7(2), 169-185.
- Müller, R., & Turner, J. R. (2010). *Project-oriented leadership*. Gower.
- O'Reilly, C. A., & Tushman, M. L. (2011). Organizational Ambidexterity in Action: How Managers Explore and Exploit. *California Management Review*, 53(4), 5-22.
- O'Reilly, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of management Perspectives*, 27(4), 324-338.
- O'Reilly, C. A., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in Organizational Behavior*, 28, 185-206.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons.
- Osterwalder, A., Pigneur, Y., Bernarda, G., Smith, A., & Papadakos, T. (2015). *Value proposition design: how to create products and services customers want* (1 ed., Vol. 2). New York: WILEY.
- Pellegrinelli, S., Murray-Webster, R., & Turner, N. (2015). Facilitating organizational ambidexterity through the complementary use of projects and programs. *International Journal of Project Management*, 33(1), 153-164.

- Petro, Y., Ojiako, U., Williams, T., & Marshall, A. (2019). Organizational Ambidexterity: A Critical Review and Development of a Project-Focused Definition. *Journal of Management in Engineering*, 35(3), 03119001.
- Pinto, J. K., & Slevin, D. P. (1989). The project champion: Key to implementation success.
- Rubalcaba, L., Michel, S., Sundbo, J., Brown, S. W., & Reynoso, J. (2012). Shaping, organizing, and rethinking service innovation: a multidimensional framework. *Journal of service management*, 23(5), 696-715.
- Serrador, P., & Pinto, J. K. (2015). Does Agile work? — A quantitative analysis of agile project success. *International Journal of Project Management*, 33(5), 1040-1051.
- Shenhar, A. J., & Dvir, D. (2007). *Reinventing project management: the diamond approach to successful growth and innovation*. Harvard Business School Press.
- Silvius, A., & Schipper, R. P. (2014). Sustainability in project management: A literature review and impact analysis. *Social Business*, 4(1), 63-96.
- Silvius, G., & Schipper, R. (2020). Exploring variety in factors that stimulate project managers to address sustainability issues. *International Journal of Project Management*, 38(6), 353-367.
- Silvius, G., & Schipper, R. (2022). Exploring the relationship between sustainability and project success - conceptual model and expected relationships. *International Journal of Information Systems and Project Management*.
- Teece, D. J. (2017). Towards a capability theory of (innovating) firms: implications for management and policy. *Cambridge Journal of Economics*, 41(3), 693-720.
- Turner, N., Maylor, H., & Swart, J. (2015). Ambidexterity in projects: An intellectual capital perspective. *International Journal of Project Management*, 33(1), 177-188.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a New Dominant Logic for Marketing. *Journal of marketing*, 68(1), 1-17.
- Yin, R. K. (2014). *Case study research : design and methods* (5th ed.). SAGE.

Leading Transformation in an Uncertain World: A Case for Strategic Speculative Design

Ingjerd Straand¹ and Birgit Helene Jevnaker²

¹University of Stavanger, Norway

²BI Norwegian Business School, Oslo, Norway

ingjerd.j.straand@uis.no

birgit.h.jevnaker@bi.no

Abstract: Strategic speculative design is an uncertainty-oriented approach to perceptually bridge today with envisioned futures through knowledge-seeking design practices such as User experience design. As such, it may complement practices for facilitating transformative change found in management theory and innovation. Despite gaining importance in design schools, strategic speculative design however remains largely unfamiliar in leadership and management research and practice. We argue that this perspective may enable more active participation and dialogue with a variety of stakeholders about forthcoming or possible transformations, which may open for new or improved construction of opportunity in the present. Our paper is conceptual and offers a new model for strategic speculative design as an organisational change method relevant for transformation leadership and discusses possible managerial implications.

Keywords: Strategic speculative design, Digital transformation, Leadership, Organisational change, New capabilities

1. Introduction

The purpose of this paper is to unpack the essential case of strategic speculative design (SSD) in leading transformation in an uncertain world. We argue that highly uncertain organisational changes and digital transformations require not only improving design/business practice, but also a better conceptual understanding. Why is this approach of interest for leading transformative change? To accelerate learning about practices of change and transformation, we need “participatory, reflective, and action-based forms of research that simultaneously work with *techné*, *phronesis* (practical wisdom), and *epistémè*” (Sharpe *et al.*, 2016, p. 47). Given this learning orientation, we need more pluralistic and critical-constructive research to generate new or alternative and practical knowledge, found lagging in knowledge management research (Jevnaker and Olaisen, 2022; Olaisen and Jevnaker, 2023). One future-oriented and potentially useful, pluralistic approach is SSD. Despite gaining importance in design schools (Dunne and Raby, 2013; Hill, 2014; Bason *et al.*, 2020), SSD remains largely unfamiliar in leadership and management research and practice. We argue that speculative design could take both strategizing and organising practices into account in creative, smart ways, which deserves further exploration.

On this background, our research question is: *How can strategic speculative design enable transformative practices that may foster (or hinder) change endeavours in the context of leading sustainable organisations?*

Leading sustainable organisation can be understood from several change and sustainability orientations (see e.g., Jevnaker and Olaisen, 2022). However, transformative changes become fostered (or not) in current real-world or future practices. We argue that strategic speculative design offers a perspective not only for dealing with complex transformation as it occurs, but also for enabling new capabilities and a much wider set of opportunities or trajectories driven by digital transformation. In our paper we will utilise emergent theory from design and discuss this with illustrative examples of practices and open up for an improved understanding of SSD, in whatever ways it might emerge in real-world organisation.

In the following, we thus first introduce our design-oriented theoretical perspectives and the explorative methods taken, before delineating our key conceptual findings with some examples. We then propose a new model for SSD as an organisational change method relevant for transformation leadership and discuss managerial implications.

2. Theoretical Perspectives

In this paper we draw mainly from two theoretical literatures, the first is strategic and speculative design, and the other is complex strategising in transformative change: How could SSD be connected to strategy in connection to organising transformative change?

2.1 Strategic speculative design

SSD is an emergent design field of interest for management and organisation studies and comprises two terms that are used within design research: Strategic design and speculative design, which we introduce below.

Strategic design encompasses all the core elements of designing from user insight to iterative prototyping, and applying it to solving complex/systemic challenges (Helsinki Design Lab, 2013; Hill, 2014; Holland and Lam, 2014). There is an alternative use of the term 'strategic design' relating to the strategic management of design to achieve business goals (Holland and Lam, 2014), a narrower definition compared to what we discuss here. Our understanding is the strategic use of designerly and transdisciplinary ways of thinking and acting in order to achieve or foresee alternative strategies for policy, a city, an organisation or a company including decision-forming and -making in turbulent and uncertain contexts (Meroni, 2008). Thus, there is some resemblance to the term "mission-oriented innovation" (Mazzucato, 2021; Hill, 2022) as a method to achieve systemic change.

Design is in essence, future-oriented, dealing with products and services that do not yet exist. Speculative design relies on creative speculation and critical thinking (Dunne and Raby, 2013) and propositions such as asking "what if...?" (Simon, 1967, 1996) and probing into what the future could and should be (Zimmerman and Forlizzi, 2014). It also entails design making at the boundaries of enterprises (Jevnaker, 1993, 2005), experimentation, action simulation, and action learning in the context of uncertain and often equivocal (Weick, 1995) organisation transformations, which can go in many unforeseen directions (Jevnaker and Olaisen, 2022). Its value comes from not only speculating about futures, but 'making real' possibilities and inspirations through sketching, prototyping, and crafting tangible and intangible objects and concepts. Thus, speculative design can happen in manifold forms.

2.2 Strategizing in Complex Transformative Change

We seek to combine the construct of speculative design with a rich conception of strategy, and especially the notion of strategising as a practice and ongoing process, building on the practice turn within management studies (e.g. Tsoukas and Chia, 2002; Jarzabkowski, 2005; Sharpe *et al.*, 2016), we are sensitised by the process-based practice views (Tsoukas and Chia, 2002) for our study. Because strategising in complex transformative change affected by design work tends to be highly dynamic over time and place (Olins, 1989; Jevnaker, 1993, 2012), a rich process-orientation is relevant for identifying what can enable SSD that foster (or hinder) transformative change in real-world organisations.

Furthermore, in this study, we were sensitised by key constructs from change management and digitalisation literature; in particular, that of digital transformation (DT). Kraus *et al* (2021) offers an overview of the manner in which digital transformation may be classified and defined from their systematic review process, where a common description is how DT and digitalisation differ from *digitisation*; the more trivial process of automating or converting from analogue to digital form (Hess *et al.*, 2016; Kraus *et al.*, 2021). In line with Hess *et al* (2016), we see DT as an area of complexity that may change not only products or services but entire business models and the way a company or organisation operates. As such, it is an important issue for management/leadership, and yet, in our opinion, it is often left at the table of IT or function staff.

One angle that is currently used by change management consultancies, is the *three-horizons* model (Baghai *et al.*, 2000), developed by partners at McKinsey & Company. This model distinguishes between improving performance and leveraging remaining value in existing core businesses (horizon one), and also considers working with new entrepreneurial ventures and emerging opportunities (horizon two). Horizon three contains ideas for profitable growth further on, such as pilot projects, research projects, or stakes in new businesses. The framework is regarded as a simple "structure" to assist how leaders can work with potentially all three growth horizons concurrently or over time without neglecting value-creation in the enterprise's core business. What is however underrated in this model, is the complex dynamics and interdependencies in-between practices on the three horizons, as well as inside each of them. Moreover, SSD could also work creatively with alternative profitable practices within a green or even de-growth perspective.

2.3 Combining Perspectives

It is important to recognise the complex multi-faceted aspects of both design and strategizing in a highly uncertain, transformative change context. Past research indicates that strategic design such as in design-driven innovation (Verganti, 2009) unfolds through potentially tension-rich meaning-making and somewhat fragile designer/enterprise relations (Jevnaker, 2012). SSD can emerge in processes with hired designer groups and/or with groups of internal specialists and leaders (Bruce and Jevnaker, 1998; Svengren, 1998; Jevnaker, 2005, 2012,

2014; Hill, 2014). Although each design process might differ, there still seems to be some commonalities which we shall come back to. For example, SSD seems to involve collaborative and potentially co-creating activities as well as a variety of expertise and relations. Summing up and combining literature on strategic design and innovation through digitalisation, we created the following model for SSD in the context of digital transformation, adapted from Hill (2018), see fig. 1.

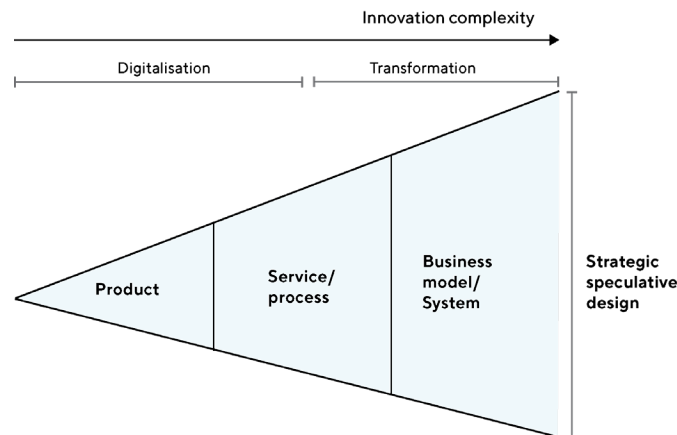


Figure 1: Strategic design may encompass speculative designing at different levels and scales of innovation complexity from digitalisation to digital transformation (adapted by authors based on Hill, 2018)

This model allows us to address speculative design in a transformative change and digitalisation context. It resonates with findings in past relevant research that innovation groups encounter multiple complexities and process dynamics (Van de Ven, 2017). Also, strategic design practices could move from product or service problem-solving orientations towards a wider scope of (re)configuring business practices and meaning-making (Jevnaker, 1993, 2000, 2012; Verganti, 2009; Keeley *et al.*, 2013) and be applied to systemic challenges.

3. Research Method

In line with our explorative and conceptual aim, we have addressed SSD as a case of interest for transformative change in an uncertain world, informed by two main theoretical perspectives. We see this as a model paper, where we pursue to identify connections between constructs (Jaakkola, 2020) and to offer a visual representation (Gilson and Goldberg, 2015). It is not an empirical investigation, but we find it useful to draw on exemplary SSD endeavours to conduct our analytical construction. The examples or “mini-cases” are based on a mix of published material and conversations and observations over time with key actors that had a role in their execution. Thus, they were not selected at random, but were considered to be illuminating and relevant for the paper topic. Both cases have been presented publicly and are award-winning as particularly innovative (Kollektivtrafikkforeningen, 2021; DOGA, 2023).

We combined an experiential, narrative approach with visual mapping, fitting for the paper’s aim and material. The authors shared the work between them in the following ways: Both authors proposed the case of this paper and equally developed its conceptual ideas and analytical discussion. Author1 selected and elaborated the two main examples in section 4, drawing on recent research, participant observations, and intimate knowledge of several real-world digital transformations that included complex user interaction design and innovation work. Sensitised in in-depth past strategic design/management and innovation research, Author2 proposed theory-informed aspects of the analytical categorising and elaborated elements for the new model. Both researchers developed and discussed all parts of this paper’s study.

4. Exemplary Practices

Our case is SSD as a transformative change practice. As a subject matter this is still understudied beyond a few exceptions (see e.g. Tseklevs *et al.*, 2019; Sustar, Mladenović and Givoni, 2020), and thus we will make our presentation more concrete and insightful by elaborating two examples from recent real-world transformative change efforts from Norwegian settings. The first example is an exploration into an alternative strategic vision for digital money issued by a central bank, and the second example is an algorithmic real-time pricing model for public transport. These exemplary SSD endeavours are interesting and relevant because they offer rich experiential and revelatory aspects of working with strategic design to promote and enable digital

transformations in real-world organisational contexts. Below, we provide a brief overview of the case vignettes before proceeding with analytical discussion.

4.1 Digital Money as a Platform for Sustainability

This project explores how central bank digital currency (CBDC) may be used as a platform for achieving sustainability goals and public sector innovation. CBDC is electronic money made available to the general public as a form of digital “cash” and therefore a public alternative to account money issued by private banks. The strategic design work executed in this project was done in the context of a master thesis (Sæstad, 2022) where interaction designer Glenn Sæstad found that central banks were currently exploring digital central bank money and focused on how digital currencies may make the financial system more efficient, secure and innovative. The UN climate panel and the public sector call for more sector-wide action and instruments to be able to address the sustainability goals and reduce the effects of climate change (IPCC, 2023). Thus, Sæstad set out to work in parallel with one of the working groups in Norway's central bank and engaged in dialogue with them before, during and at the end of the work. When the working group mentioned they were going to use futures methods (scenario techniques), then Sæstad decided to also follow futures method, but opted for working strategically with transformation to explore multiple paths for a desired future where digital money is construed as a platform for SDGs (Sæstad, 2022). The exploratory design work resulted in various concepts for what CBDCs could be used for in the public sector. Further, an alternative strategic vision was proposed for investment in smart digital central bank money in collaboration with the rest of the public sector, where the sustainability goals were set at the centre. The vision contained four strategic principles and a collection of service concepts which illustrated what such a vision could lead to (Sæstad, 2022), see fig.2 for exemplification of service concepts related to the strategic principles. The service concepts acted as opportunities for dialogue and ponderings on possible futures.

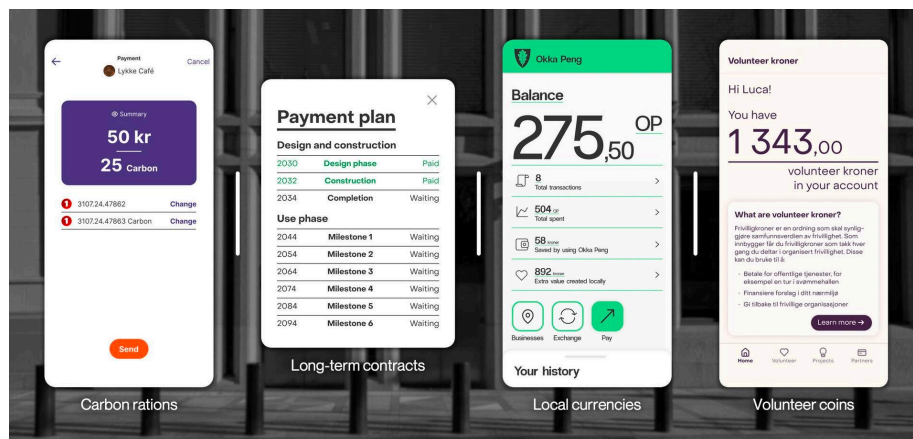


Figure 2: Using strategic speculative design to explore concepts built on top of CBDCs as a platform for achieving Sustainable Development Goals (SDGs) (Sæstad, 2022, used with permission)

4.2 Flexible and Adaptive Pricing Models for Public Transport Travels

Public transport ticket pricing is mostly fixed and set by travel zones with rebates based on subscription models (e.g. monthly passes etc). The rebate models incentivise high-frequency travelling, but provide little incentives for occasional travellers, for instance those working parts of the week from a home office or would prefer the bike when the sun shines. At the public transport authority *Kolumbus*, in the Stavanger region, interaction designer Mathias Molden started looking into alternative pricing models. He particularly saw that the zone structure in some cases turned out to be unfair, and that the price you paid per kilometre and per trip varied greatly. He saw that this did not necessarily motivate sustainable behaviour. A model where you pay for what you actually use was also more suitable for new local forms of mobility (on-demand public transport and city e-bikes) where there is a higher cost per trip compared to mass transportation. The team developed algorithms and various iterations of user interfaces for a new and dynamic price concept. Algorithms are hard to grasp and to communicate, thus, a visual pricing calculator was developed on top that acted as a communication tool both within Kolumbus and with stakeholders such as city and county politicians. At the time, there was little awareness within Kolumbus of what people might end up paying if they lived just outside zones in combination with infrequent travelling patterns. Thus a visualisation of these scenarios and examples were important to illustrate the user perspectives as input to general strategy. In conjunction with this work, design interfaces for

a new digital payment solution was designed and embedded into the real time transport app that Kolumbus developed from scratch. Currently, the system is being tested by 700 users as part of a Norwegian research council funded project in collaboration with the Institute for Transport Economics and Ruter (PTA for Oslo-region).

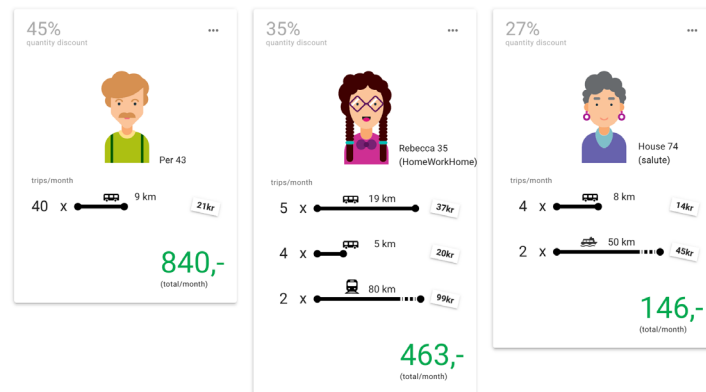


Figure 3: Interactive pricing calculator for different travel patterns (screenshot translated by Google Translate)

5. Analytical Discussion

In this paper we asked: How can SSD enable transformative practices that may foster (or hinder) essential change endeavours in the context of leading sustainable organisations? Based on our study of existing research and examples of potentially SSD practices, we identified several triggering puzzles, which we will discuss in this section.

5.1 Some Puzzling Aspects From Practice

The two examples introduced allowed us to identify some aspects emerging in SSD:

The first example, the diploma thesis 'DSP for SDG', outlines a new direction and radical ambitions for the use of digital central bank currency potentially creating added value for society at large. The project was to some extent beyond what the central bank perceived as their mandate, and they traditionally looked towards private sector innovation for inspiration and had not considered how they could support public sector and municipal innovation. Thus, it was important to anchor the innovation proposed in the project in broader national policies and strategies (Sæstad, 2022). The project explored how design can play a role in transforming society on a financial level, a context where design rarely plays a strategic role resonating with design-informed research on innovation (Keeley *et al.*, 2013). Interestingly, the project also contributed to communicating the monetary system more broadly. Sæstad reflects in his thesis that the complexity of the topic may be a democratic problem. The concepts and the strategic principles helped clarify for stakeholders what money is and how CBDCs *might support* public sector innovation if we take SDGs into account. Furthermore, the project did not start from a specific technological point of view, but rather from use cases and several possible future business models and systemic solutions, which helped envision new practices.

In our second example, from a regional public transport company, the wider scope for digitalisation and innovation was central. The interaction designer was part of a forward-leaning team which had proved itself with well-received, award-winning and innovative digital products and new mobility solutions. The team leader shared the idea of a smarter knowledge base for ticket prices. When county politicians commissioned Kolumbus to reintroduce the 'punch cards' (multiple trip rebate cards) in 2018, the team decided to look beyond the instructions and explore underlying purposes: "To make public transport more attractive for occasional travellers". This was interpreted to be in line with their ongoing exploration. Thus, rather than launching technology from the 'paper era', they continued with the dynamic payment model. Through a long term design process, the team moved between diving deep into background information such as legal frameworks, and designing strategy and artefacts to communicate the transformation - and the designing of finalised solutions and products/services - including running beta tests with functional solutions and actual users.

From both examples, strategizing in design practices occurred in and through *particularities* of strategic mapping and reconfiguring processes, whether done by design experts in collaboration with established companies and/or a mix of design/management teams, or other people engaging in design (Olins, 1989; Jevnaker, 2000;

2005; Hill, 2014, 2022). Why actors engage in a speculative design may thus not be as simple or straightforward as the three-horizon change model could suggest. Rather than simply “a structure” of three distinctive growth horizons, we may instead view them as a dynamic complex of transformation and renewal practices. More specifically, speculative design practices can present some interrelated common challenges and potentials, which deserve further discussion.

5.2 Towards a Model of Strategic Speculative Design

Strategic design typically includes transdisciplinary creativity and imaginary processes engaging with *wicked* or ill-defined problems (Rittel and Webber, 1973; Buchanan, 1992), as well as navigating innovation processes with multiple uncertainties. In particular, SSD involves working with both visible and invisible complexities (Jevnaker, 2005, 2012), where the invisible has been referred to as “dark matter” (Hyde, 2012; Hill, 2014) and traditionally beyond the scope of design. Drawing on existent sensitising literature and some comprehensive real-world examples, we identified four puzzling aspects that could foster potentially transformative change practices. These are condensed and illustrated in fig.4, below.

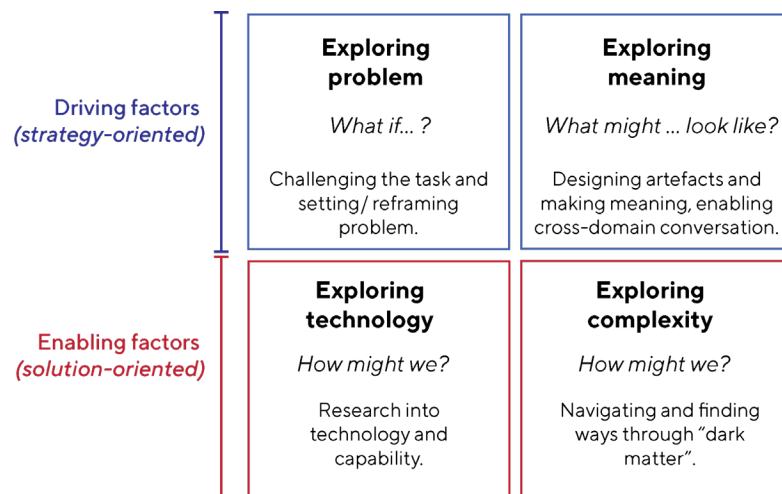


Figure 4: Pieces of the puzzle of SSD in transformative change practices

The four aspects in fig. 4, comprise two *driving factors* that are strategy-oriented towards creating alternatives for possible, plausible and (potentially) desirable futures (Miller, 2007; Dunne and Raby, 2013) and creating meaning and purpose (Mayer and Roche, 2021). They are explorative and answer values-based and reframing open-ended questions, such as “What if digital central bank currency was a platform to achieve sustainability goals?” (from example 1) or “What if we could offer a more fair pricing model that incentivises sustainable travel patterns”? (from example 2). In exploring meaning, several design artefacts were made in order to examine what such a future might look like - including design at different levels of complexity: products, services/processes and business models/systems (see also fig. 1).

Then, there are also two *enabling factors*, which are more solution-oriented, and answering questions such as how the strategic dimension may be achieved with both technology, capabilities and through exploring and finding ways through the “dark matter” (Hill, 2014, 2018), i.e. all the invisible yet necessary complexity such as legal frameworks or contracts between organisations (Hill, 2014, 2018). These enabling factors can also feed into and foster (or hinder) the strategic drivers, such as when moving into realisation and implementation, where objects will have to change based on what is possible in the present. Yet it is important to distinguish the enabling from the driving factors in transformation, because the enabling factors are in flux and might change rapidly what will be possible (high degree of uncertainty). Whereas the strategic oriented factors of creating meanings and alternatives (Verganti, 2008) are future oriented in nature and could sustain (Jevnaker, 2012) while the enabling factors, in particular with new and disruptive technologies, might change quickly.

In sum, we found that there are some key recurrent activity aspects – what we for simplification have called “pieces of the puzzle” of SSD. These four aspects are not strict categories, sometimes they may be overlapping (technology may be complex, in the case of AI for instance). And with “exploring complexity” we refer not only to legal or contractual matters but sustainability aspects (e.g., in short- or long-term) and dynamic contextual forces in human and business interaction in their habitats such as ecological factors (Jevnaker and Olaisen, 2022). The pieces do not unfold in an already ready-made recipe. Rather, they are recurrent *ingredients* in SSD

processes. By introducing such a sensitising framework, we also make clear that while technology and jurisdiction may be enablers (or barriers), it is in the dynamic strategising practices that alternatives and visions can become created and visualised for different alternative futures and directions that practising groups, enterprises, or communities in society may move towards in concurrent digital transformation. It is here we might create dialogue on what the future should be so that we may use it to steer by (Miller, 2007).

6. Conclusion and Managerial Implications

In this paper, we identified four speculative design practices that are strategic oriented or solution oriented. Given that strategic speculative design can enable new productive practices in both imagining and performing transformative change, it seems essential for leaders to personally collaborate in, and encourage such processes, even if they start out open-ended and with no defined technology as a starting point. Despite many complexities, an important implication for managers is actively engaging in the speculative design inquiries and thus eventually learning to work with the dynamics of SSD in the particular transformative context with potentially shifting use patterns. To participate and co-create *hands-on* is essential for not only becoming more familiar with, but also learning to work creatively with new strategic opportunities and perspectives. We also find that the SSD perspective can enhance and contribute to literature on digital transformation and how to deal with complex, future-oriented challenges.

References

- Baghai, M. et al. (2000) *The Alchemy of Growth: Practical Insights for Building the Enduring Enterprise*. Illustrated edition. Basic Books.
- Bason, C. et al. (2020) *A new Bauhaus for a green deal*. ucl.ac.uk. Available at: https://www.ucl.ac.uk/bartlett/public-purpose/sites/public-purpose/files/new_bauhaus_cb_rc_dh_mm.pdf (Accessed: 3 October 2023).
- Bruce, M. and Jevnaker, B.H. (eds) (1998) *Management of Design Alliances: Sustaining Competitive Advantage*. 1st edn. Wiley.
- Buchanan, R. (1992) 'Wicked Problems in Design Thinking', *Design Issues*, 8(2), pp. 5–21.
- DOGA (2023) *This years winner of honorary design award, Design and Architecture Norway*. Available at: <https://doga.no/aktuelt/vil-redde-verden-med-digitale-klimapenger--far-hedersmerket/> (Accessed: 6 October 2023).
- Dunne, A. and Raby, F. (2013) *Speculative Everything: Design, Fiction, and Social Dreaming*. MIT Press.
- Gilson, L.L. and Goldberg, C.B. (2015) 'Editors' Comment: So, What Is a Conceptual Paper?', *Group & Organization Management*, 40(2), pp. 127–130.
- Helsinki Design Lab (2013) *What is strategic design?* Available at: <https://www.helsinki.designlab.org/pages/what-is-strategic-design.html> (Accessed: 12 October 2023).
- Hess, T. et al. (2016) 'Options for Formulating a Digital Transformation Strategy', *MIS Quarterly Executive*, 15(2), pp. 123–139.
- Hill, D. (2014) *Dark matter and trojan horses: A strategic design vocabulary*. Strelka Press.
- Hill, D. (2018) 'The City Is My Homescreen', in *Proceedings of the 2018 ACM International Conference on Interactive Surfaces and Spaces*. New York, NY, USA: Association for Computing Machinery (ISS '18), p. 1.
- Hill, D. (2022) 'Designing Missions. Mission-Oriented Innovation in Sweden—A Practice Guide by Vinnova'. Vinnova, Stockholm. Available at: <https://www.vinnova.se/en/publikationer/mission-oriented-innovation---a-handbook-from-vinnova/>.
- Holland, R. and Lam, B. (2014) *Managing Strategic Design*. Bloomsbury Publishing.
- Hyde, R. (2012) *Future Practice : Conversations from the Edge of Architecture*. London, UK: Taylor & Francis Group.
- IPCC (2023) 'Summary for Policymakers', in H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (ed.) *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, pp. 3–34.
- Jaakkola, E. (2020) 'Designing conceptual articles: four approaches', *AMS Review*, 10(1), pp. 18–26.
- Jarzabkowski, P. (2005) *Strategy as practice: An activity based approach*. London, England: SAGE Publications (Sage Strategy Series), pp. 1–216. Available at: <http://www.torrossa.com/gs/resourceProxy?an=4913191&publisher=FZ7200> (Accessed: 9 October 2023).
- Jevnaker, B.H. (1993) 'Inaugurative learning: adapting a new design approach', *Design Studies*, 14(4), pp. 379–401.
- Jevnaker, B.H. (2000) 'How design becomes strategic', *Design management journal*, 11(1), pp. 41–47.
- Jevnaker, B.H. (2005) "'Vita Activa": On Relationships between Design(ers) and Business', *Design Issues*, 21(3), pp. 25–48.
- Jevnaker, B.H. (2012) 'Vestiges of design-creation: Inquiry into the advent of designer and enterprise relations (BI dissertation series, 6/2012)', *BI Norwegian Business School* [Preprint].
- Jevnaker, B.H. (2014) 'The paradoxical road to innovation—The role of creative design', *The highways and byways to radical innovation — Design perspectives. Research anthology*. Kolding: Kolding School of Design and University of Southern Denmark., pp. 41–67.

- Jevnaker, B.H. and Olaisen, J. (2022) *Reimagining Sustainable Organization*. Springer International Publishing. Available at: <https://doi.org/10.1007/978-3-030-96210-4>.
- Keeley, L. et al. (2013) *Ten Types of Innovation: The Discipline of Building Breakthroughs*. John Wiley & Sons.
- Kollektivtrafikkforeningen (2021) *Nominerte til Kollektivprisen 2021: Kolumbus*. Vimeo. Available at: <https://vimeo.com/644712581> (Accessed: 6 October 2023).
- Kraus, S. et al. (2021) 'Digital Transformation: An Overview of the Current State of the Art of Research', *SAGE Open*, 11(3), p. 21582440211047576.
- Mayer, C. and Roche, B. (2021) 'Putting purpose into practice'. Edited by C. Mayer and B. Roche. Oxford University PressOxford. Available at: <https://doi.org/10.1093/oso/9780198870708.001.0001>.
- Mazzucato, M. (2021) *Mission Economy: A Moonshot Guide to Changing Capitalism*. Penguin UK.
- Meroni, A. (2008) 'Strategic design: where are we now? Reflection around the foundations of a recent discipline', *Strategic Design Research Journal*, 1(1), pp. 31–38.
- Miller, R. (2007) 'Futures literacy: A hybrid strategic scenario method', *Futures*, 39(4), pp. 341–362.
- Olaisen, J. and Jevnaker, B. H. (2023) 'Reimagining Power and Micro-politics in Project Organisations', *European Conference on Knowledge Management*, 24(1), pp. 591–598.
- Olins, W. (1989) *Corporate identity: making business strategy visible through design*. cir.nii.ac.jp.
- Rittel, H.W.J. and Webber, M.M. (1973) 'Dilemmas in a general theory of planning', *Policy sciences*, 4(2), pp. 155–169.
- Sæstad, G. (2022) *DSP for SDG – En alternativ strategisk visjon for digitale sentralbankpenger og bærekraftig omstilling*. Master in Design. AHO. Available at: <https://aho.brage.unit.no/aho-xmlui/handle/11250/3003050> (Accessed: 6 October 2023).
- Sharpe, B. et al. (2016) 'Three horizons: a pathways practice for transformation', *Ecology and Society*, 21(2). Available at: <https://doi.org/10.5751/ES-08388-210247>.
- Simon, H.A. (1967) 'Understanding creativity', *Creativity: Its educational implications*. New York [Preprint]. Available at: https://iiif.library.cmu.edu/file/Simon_box00065_fld04951_bdl0001_doc0001/Simon_box00065_fld04951_bdl0001_doc0001.pdf.
- Simon, H.A. (1996) *The Sciences of the Artificial, third edition*. MIT Press.
- Sustar, H., Mladenović, M.N. and Givoni, M. (2020) 'The Landscape of Envisioning and Speculative Design Methods for Sustainable Mobility Futures', *Sustainability: Science Practice and Policy*, 12(6), p. 2447.
- Svengren, L. (1998) 'Integrating design as a strategic resource: The case of Ericsson Mobile Communications', in M. Bruce and B.H. Jevnaker (eds) *Management of Design Alliances*, pp. 159–178.
- Tseklevs, E. et al. (2019) 'Rethinking how healthcare is conceptualised and delivered through speculative design in the UK and Malaysia: A Comparative study', *The Design Journal*, 22(sup1), pp. 429–444.
- Tsoukas, H. and Chia, R. (2002) 'On Organizational Becoming: Rethinking Organizational Change', *Organization Science*, 13(5), pp. 567–582.
- Van de Ven, A.H. (2017) 'The innovation journey: you can't control it, but you can learn to maneuver it', *Innovations*, 19(1), pp. 39–42.
- Verganti, R. (2008) 'Design, meanings, and radical innovation: A metamodel and a research agenda', *The Journal of product innovation management*, 25(5), pp. 436–456.
- Verganti, R. (2009) *Design-driven Innovation: Changing the Rules of Competition by Radically Innovating what Things Mean*. Harvard Business Press.
- Weick, K.E. (1995) *Sensemaking in Organizations*. SAGE.
- Zimmerman, J. and Forlizzi, J. (2014) 'Research Through Design in HCI', in J.S. Olson and W.A. Kellogg (eds) *Ways of Knowing in HCI*. New York, NY: Springer New York, pp. 167–189.

Diversity and Sustainability as a New Base for Leadership

Emőke Takács¹ and Toon Abcouwer²

¹ERI Hungary – European research Institute Nonprofit Kft

²ERI Hungary – European research Institute Nonprofit Kft

t.emoke@eri.net.in

toon@abcouwer.nl

Abstract: Current developments in contemporary society require a fundamental re-discussion of some commonly accepted “truth”. This paper highlights some critics of economic, societal and environmental aspects relevant to sustainability. Analysing these three aspects affecting individuals and society makes us consider the different beneficiaries, their knowledge sources and management. Our paper discusses a new type of leadership in our uncertain world by shifting the focus from economic, societal and environmental aspects to regarding the beneficiaries as well: the individuals (Me), the organisations (We) and the society (All). Experiences built under changing circumstances require less and less focus on knowledge transfer and more on knowledge exchange. Basing ourselves only on knowledge sources (from scientific (trustworthy?) sources) is questionable and needs reconsideration. The importance of exchanging experiences among managers and leaders shows the need for life-long learning. The use of information/knowledge is becoming more relevant than its ownership. Moving the focus to use and interpreting knowledge is a differentiating factor that forms the basis for creating value. In cooperation, where decision-makers share ownership and communicate their interpretations, we explore a new role for the “we” (the organisational value), compared to the traditional orientation where organisations only fulfil individual (shareholder) value or alike. Our finding lead to new forms of equity, where the chances for success are equal, regardless of educational level, gender or cultural background. A sustainable society for everyone requires a broader view of reality than only for the privileged ones. It is also a different approach to striving for diversity. For sustainability, as the world’s ability to host our successors, managers and leaders should not limit themselves to traditional certainties, like intellectual property, value and ownership.

Keywords: Leadership, Stewardship, Diversity, Sustainability, Me-We-All, Life-Long learning

1. Change, the Thing we can be Certain of

1.1 Developments

Since the world exists, change has always been happening in society, forming human life, economies, and technologies (Beck, 2006). Changes are the results of long-term developments which require collaboration and shared values. Values also change with the developments. In history, during the hunter age, people understood the importance of cooperation to survive, while in the warrior age, divides between kings and enslaved people appeared. Craftsmen age gave more chances for talents and those working hard, and mechanisation resulted in mass production, opening access to products and services to more people than the privileged ones. Industrialisation has changed the importance of man by using electric power. The increase in wealth due to mechanisation and technical innovation developed the service industries, and internationalisation opened various multinational cooperations. Knowledge exchange and knowledge industries impact education, and science became the fundament of industrialism and modernisation. All these developments leave their footprints on society, the economy and the environment. They change people’s behaviours, attitudes and values.

Today's society operates in an open, even more evolving, dynamic landscape of culture, values and technology. When a technology approaches barriers, a new technology will be invented to solve it (Abcouwer et al., 2022). In line with this, Kurzweil (2014) predicts that such paradigm shifts did and will continue to become increasingly common, leading to “technological change so rapid and profound, it represents a rupture in the fabric of human history”. He believes the Law of Accelerating Returns implies that a technological singularity will occur before the end of the 21st century, around 2045, which may suggest a faster and more profound change in the future accompanied by equally profound social and cultural change.

Change is of all times, and the implicit need of people striving for a new equilibrium is also of all times. However, we realise that in the last decades, modern technology has been speeding up this process indefinitely. Such continuous processes reach for new equilibriums and immediately plant the seed for the next challenge. The challenges we face in this speeding up are unpredictable and unknown, so our thinking and approaches must be new. In this ever-changing environment, people are challenged to continuously explore new ideas, create connections and strive for progress while keeping their values. People, families,

organisations, and governments must adapt to the speeding changes, creating an environment full of uncertainties. Change is the thing we can be certain of.

1.2 Concepts

This paper relies on many concepts we developed in our previous research, such as the Adaptive Cycle of Resilience (ACoR) model or the 'Me-We-All approach'. We find it essential for managers and leaders to govern their organisations in any circumstances our changing dynamic life brings.

The "Want-Must-Can" dilemma (Heene, 2002) seeks a new balance within what we want, must and can do in a changing environment. Organisations regularly face changes, and according to Prigogine and Stengers (1987), it creates instability, (threatening) chaos and perpetual motion. For optimal functioning, after each challenge, a new equilibrium must be developed.

The *Adaptive Cycle of Resilience* (Abcouwer et al., 2020) is a method to understand an organisation's situation in a world facing unforeseen developments and uncertain future(s) and help to overcome the challenges. It highlights the importance of adaptivity in the cyclical development of an organisation recognised by four quadrants. The infinite cycle starts from an assumed 'Equilibrium' state, where relatively small disturbances appear, which we want and can deal with. However, when external influences severely disrupt this equilibrium, the organisation climbs to the 'Challenge' quadrant, where managers, leaders (and their teams) face uncertainty and are forced to search for new solutions. This leads to the 'New Combinations', where awareness, leadership and governance are crucial. After determining several options for the case, the most suitable solution must be chosen to reduce uncertainty. The transition to the so-called 'Operationalisation' quadrant requires innovation capacity. It is challenging because we cannot predict whether the final choices will be successful. The model suggests tips and tricks on what managers and leaders can do in the different quadrants.



Figure 1: Developments and the Adaptive Cycle of Resilience (Takacs & Abcouwer, 2021)

We also identified some traps we could fall into.

- Lock-in, when management does not see the crises or challenges coming
- Poverty, when they lack the creativity to come up with new solutions
- Isolation, when they cannot convince the organisation to initiate the change
- Rigidity, when there is resistance to change.

The ACoR model mainly focuses on going through disruptive change, whether on an individual, organisational, or societal level, with a repetitive short-term change trajectory. However, it emerges to care for long-term developments and their effects on Earth.

The 'Me-We-All' approach (Abcouwer et al., 2022) considers all stakeholders of the developments, including the world around us. The guiding principle is that everyone works to leave the world in a better shape, guaranteeing a sustainable future.

As the world changes, an important question arises about individuals' and organisations' role in society. It forms the context in which any development will take place. Society, or in a broader sense, our world, will always last longer than any individual or organisation. So, striving for short-term welfare cannot be an objective in the long run. We need to find a balance between individuals and their organisations within the given context.

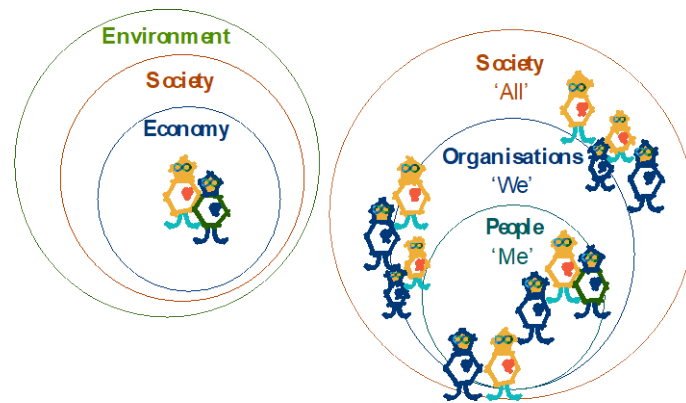


Figure 2: The ‘Me-We-All’ approach of meeting and balancing of interests (Abcouwer et al., 2022)

Based on the awareness that individuals cannot exist without organisations or society, we must pay attention to how we can align individual behaviour in an organisational context to reach objectives above the personal level. Our aim should be to contribute to an inclusive and sustainable society where everybody and the world will survive. We must ensure that future generations live a life where well-being is more important than the current focus on individual welfare. A way is by balancing the needs and responses of ‘Me-We-All’.

Managing and leading our lives or the organisations in such changing and unstable circumstances is challenging (Lunenburg, 2013; McMillan, 2010). Managers and leaders handle short- and long-term challenges where predictability is not obvious. This article introduces how managers and leaders of organisations can sustain their successes by being open-minded, accepting, mindful, resilient, adaptive, and keep on learning. But first, we formulate some criticisms about the current developments.

2. Critics, Which Make us Strong

In recent decades, under the influence of Anglo-Saxon thinking and neo-liberalism (Blair, 2003), we have mainly focused on individual interests and pursuing higher personal prosperity. However, as the current widening divides show, this development started to derail. Illustrative examples include the ever-increasing economic, 1st/3rd world, gender, race, and many other divides (Herrera, 2016) that impede a normally functioning society. Consequently, under the strong emphasis on individual well-being, organisations primarily focus on fulfilling the particular interests of shareholders and their employees. Even government organisations pursue personal interests instead of the societal ones which they are established for. Although, we should be aware that organisations are artefacts represented by individuals and their needs. The ‘Me-We-All’ approach explores a new balance between individual and societal interests made by people working in organisations. Reaching a new balance requires openness, determination, awareness and a profound paradigm shift.

Current developments in contemporary society require a fundamental re-discussion.

2.1 Questioning “the Truth”

Today’s society is based on some commonly accepted “truths” (Sheldrake, 2012; White, 2013), which were developed in the age of industrialisation and continued during the information age, where technology forms the basis for life and economy. Post-industrialisation opens and interconnects the world, aggravating the disparities between the “haves” and “have-nots”. Egoism, consumerism, carelessness, money orientations, deceptions and extortions, fast fashion, traffic and pollution, wasteful industries and households, justice, bribes, power, control and hierarchy, or virtual lives are only some of the results of the changes in the post-modern society. As society develops, many side effects appear, such as pollution and inequality. Values, therefore, are of great importance in our lives.

We have focused on a worldview based on individualism within the neo-liberalism approach in the past decades. After World War II this was a practical approach to building the world rapidly. In the Western world, individual welfare contributes heavily to the well-being of society. Meanwhile, the focus was on individual performance, assuming the community gains an advantage when every individual performs optimally. We saw it a logical choice in the reconstruction time after a decline. However, it also carries a risk of imbalance within society. The difference in capabilities and entrepreneurship led to growing discrepancies. It shows a growing wealth gap and a distinction between those with assets and those without (Abcouwer et al., 2022). Economic and technological developments initiate divides that threaten societal outcomes to a great extent. Ownership

divides and wealth -digital - and many more divides make us unable to overcome problems in terms of fair sharing, cooperation, future orientation, etc., leading to a situation in which sustainability is under threat in the long run. It all leads to increasing antagonism between people. If society continues to grow, we can cover this issue, but in a world with limited resources, we also start to see problems arise. Where resources are no longer abundantly present, competition for access to and ownership of those limited resources becomes the next challenge. This phenomenon is evident in international geopolitics. Developments in this political field are apparent. These developments lead to contradictions in which political and economic policies are pursued. Many have cultural differences in values and norms systems espoused by the various power blocs. It shows clearly that reasoning from the perspective of societal benefit from an individual and ownership-based perspective does not work.

2.2 Intersectionality

When we want to understand the root cause of the current societal developments, we need to find the factors causing it. During the last decades, we mainly focused on single causes, such as where the problem originated. It was satisfying to have one reason found, and the search for other causes immediately stopped. (Hollnagel, 2014). But single causes hardly exist any longer. This links closely to the development we see in an organisational setting. For decades, we have been studying organisations as single units, trying to understand the logic of these artefacts. But in contemporary times, organisations are parts of networks, chains etc. In practice, this development requires the identification of multiple causes for current challenges. This approach of looking at differences and challenges within society links closely to the concept of intersectionality (Runyan, 2018), developed in the second wave of feminism around the nineties of the last century. It is based on the assumption that gender issues do not have a single cause. Aside from gender causes, intersectionality helps the understanding of differences that form the base for societal divides.

The socioeconomic divide is related to “You are paid what you’re worth” myth (Reich, 2023), which separates the unpaid workers, saying they are unskilled, from managers and their CEOs, who earn millions for the reasons they are more talented, they create jobs in a “free market”, which is actually under their power. The workers’ productivity is the value that they produce and has been growing for decades, while their wages have not kept pace with their productivity. The myth that you are paid what you are worth ignores power, disregards policies and labour unions, further increasing inequality by shifting power and wealth from workers to owners. False justification distorts ‘Me-We-All’ and further increases the need for intersectionality.

Education has a crucial role in improving awareness, but without restructuring education, no results can be achieved in the fields of inclusivity, diversity, and critical thinking that can foster social cohesion and challenge prejudices. Raising awareness, equity and solidarity can contribute to economic empowerment, which aims to reduce socioeconomic disparities by providing equal opportunities for economic growth, entrepreneurship, and employment.

Also, as a solution, technology and digital inclusion can contribute to equity and inclusivity.

It is now a fact that environmental sustainability is a bare minimum to strive for. Such as adopting a paradigm that emphasises sustainable practices, conservation of resources, mitigating the effects of climate change, and addressing environmental injustices that disproportionately affect marginalised communities. Acting now can ensure that the next generations will still have a place to live and work.

These paradigms should work in conjunction to addressing the divides, as they are interconnected and mutually reinforcing. It requires collaboration and shared values among ‘We’: governments, organisations, communities, and ‘Me’, individuals to enact meaningful change.

2.3 Collaboration and Shared Values

Values, the sense of right and wrong, can help us grow and develop. They help us make decisions and create the desired future. Individual values show how people live their lives and what they consider essential for their self-interests. They support one’s fulfilment. Relationship values in any organisational setting, whether in families, friendships or an educational or work environment, reflect how people relate to others. Social values show people’s relations to society, such as respect, empathy, acceptance, care, loyalty, responsibility, honesty, etc. Recent developments result in practising fewer values, leading to carelessness, greediness and discrimination. Today’s generations grow up lost in their values affecting future generations even more. Changing our attitudes is needed at all levels: in persons (Me), communities and organisations (We) towards including it ‘All’.

Leaders are responsible for approaching organisational changes with a positive, enthusiastic and growth mindset, where growth and development must be revised. They must collaborate and adapt their business practices to market changes, including taking responsibility and showing examples to people, communities, and other organisations. In our dynamic world, they must prepare for unexpected scenarios and search for new technics and technologies in a way that fulfils many interests, including what people and the world need.

Intersectionality considers different aspects and looks at problems with a broader view to identify equal ways for everyone. When decisions consider all stakeholders, 'Me-We-All', they can intersect to reach resilience, sustainability and dynamics.

3. Renewing Leadership

The critics named earlier suggest that in the uncertain world we live in now, we have to renew the ways our managers and leaders think and act. Our world needs more careful and responsible management, who can change in every aspect, and who is assigned the responsibility to shepherd and safeguard the economic, societal and environmental valuables of others. Such new leadership is called stewardship. Leaders act with stewardship in mind while actively caring for their organisations' future. Renewing leadership towards stewardship will result in benefits in the organisations (We) and the society (All) but also at the level of individuals (Me).

3.1 Focus-Shift

We see many actions to tackle the above divides. Some are given top-down binding initiatives, like the European Charter of Human Rights declared in 2000, which came into force at the end of 2009 and still needs to lead to closing the divides significantly. Others are local initiatives ending up in international actions.

New leaders must understand that shifting focus from 'here and now' to a broader and longer perspective thinking will result in a sustainable present and future for the people, the organisations, and our environment.

The stakeholders and the beneficiaries a leader with stewardship must consider are beyond the business activities but also the effects they have on the world around it, looking at values, ethics, and morals.

Stewardship guards all resources (time, money, goods and services) with the human responsibility to care for and manage the natural world. Ownership, responsibility, accountability, and reward describe managers and leaders with stewardship. They search for solutions to transform ownership, governance, and finance by reconsidering the criticised "truths" accepted by society and redesigning the organisations' operations.

Shifting leadership to stewardship requires learning. A leader who is consciously involved in life-long learning should easily reach stewardship. Those who care for their organisations also pay attention to their people. Knowledge is power, and more and more the value and the primary source for individual and organisational development. Previous research highlighted the importance of knowledge exchange, which is necessary for successful learning and management. The use of information and knowledge is becoming more relevant than its ownership. Experiences built under changing circumstances should focus more on knowledge exchange, although disputes around ownership have increased. Recognising and valuing human capital and building trust and security in the organisation can be a gain for both the individuals and the organisation - and once we recognise the importance of stewardship, - also for the world. Leaving ownership of information and focusing on building new knowledge and practices together leads to questioning and revising accepted (scientific/"true") knowledge sources, also characteristic of innovative leaders. To set a favourable environment in the organisation, hierarchy must be changed to trust, cooperation, learning, security, inclusion, equality, flexibility, inspiration, and renewal. Moving the focus to use and interpret knowledge is a differentiating factor that forms the basis for creating value. Stewardship, backed by wisdom, is conducive to a service mindset. Leadership alone is less likely to invoke cooperation and collaboration. (Dell'Era et al., 2020) In a cooperation, where decision makers share ownership and communicate their interpretations, we explore a new role for the "we" (the organisational value), compared to the traditional orientation where organisations are for fulfilling the shareholders' value or interest.

Organisational values cannot be the guiding principles, purposes and directions anymore but something the members create and shape with the consideration of 'Me-We-All'.

3.2 Creating Different Values

All value creation and measurement models agree that the most critical enablers are the leaders, who rely on people, shared goals, partnerships and resources. They use specific processes to reach results, affecting

people, economy and society. Measurements considered the legal barriers: the fields where the actions can take place, and the economic and societal results. Realising from disasters and threats that the past centuries did not consider nature and the environment, new measurements have to be added. Today, many people claim more sustainable actions, which are more ethical and consider 'Me-We-All', as explained earlier.

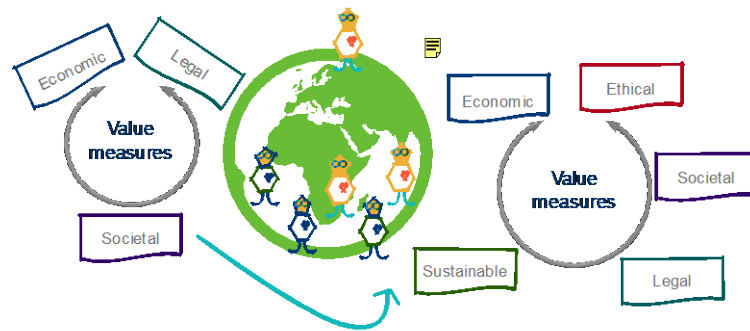


Figure 3: Changing Values (own source)

When leaders change their values towards ethical and sustainable measures, they find stewardship to deal with the critics mentioned above.

- Managers who regard Intersectionality will understand differences, and with tolerance, acceptance, focused education they can decrease any divides, strengthen cooperation of diverse teams, opting for more creative ways of dealing with challenges.
- With education they can improve awareness, build trust and engagement in the organisations, leading to better performance at all levels for 'Me-We-All'.
- Sharing and caring can reach economic empowerment to steward the organisation's future.
- Equity and creativity, along with technology and digital inclusion can contribute to an equitable and more sustainable future.
- Considering environmental sustainability is an absolute must. Neither 'Me' or 'We' or 'All' can survive without it.

4. Stewarding our Future

We have seen in this article how the developments have been changing the lives, the chances, the cultures and values of our society, how the focuses from the 'All' have changed to 'Me', as individual interests and 'We', as organisational ones, and how important it is to consider all stakeholders' interests, accept and use diversity and resilience for a more sustainable society.

4.1 Diversity and Equity

Leadership changed to stewardship plays an essential role in this process. For a sustainable present and future, managers and leaders must acquire the ethical values that form the basis for responsible planning and management of resources. Careful and responsible management considers not only the businesses, but the environment and nature, their human capital, their knowledge and information, their culture and diversity. Stewarding the future is motivated beyond economic values. They build the organisation's capacity via education and cooperation to act for 'Me-We-All'. By understanding and making available sources, stewardship helps to build individual (Me) and organisational (We) wealth and contributes to the well-being of the people (Me and We) and the society (All).

Intersectionality also teaches that differences need to be accepted and included. Offering equal prospects and ways to all is not a solution either. Standard paths were created to serve mass production during industrialisation and mechanisation, to provide the majority of solutions for living, working, teaching and access to products and services. The answer in stewardship is something completely different. It "re-norms" and changes standards. It is to offer equal outcomes and other paths that can be unique to many people. It is much more complex to care for individual cases, but letting stewardship enter our views gives power, determination and fair opportunities for equal prospects and outcomes. According to Thomas Sowell (Sowell & Friedman, 1981; Sowell & Weiner, 2010), Diversity, Equity, and Inclusion in practice support discriminatory trends because the practical ramifications of the ideology was not thought through, turning the results the other way around. "Undeserved inequalities call for redress", he says, where the chances for opportunities and

success are equal, regardless of educational level, gender or cultural background. Believing that with stewardship the abilities of individuals can be useful, they can contribute in their own unique and special way to work out solutions in a diverse problem space. Stewardship facilitates changing Equality to Equity offering everyone choices on accommodating individual differences for equal outcomes. So, not the same shoes for everyone, but shoes that fit the person. Management can ensure equity once they understand the root causes of outcome disparities. Then, they can eliminate barriers to full participation and bring fairness to the procedures and processes. It is also a different approach to striving for diversity. A sustainable society for everyone requires acceptance, trust and a broader view of reality than only for the privileged ones.

Equity, referring to the common stock of the organisations, brings ownership and intellectual property in sight. For sustainability, as the world's ability to host our successors, managers and leaders should not limit themselves to traditional certainties, like intellectual property, value and ownership. Such open-minded, careful and attentive stewardship will base cooperation in front. Instead of owning solutions, members of diverse teams contribute to results with their abilities and equal opportunities.

4.2 Resilience

The growing dynamics require management to deal with complex settings where the concept of resilience attracts attention. Westley (2002) categorises the current organisational developments by the level of diversity, continuous change, learning and the complex interactions that make them unpredictable. Holling and Gunderson (2002) differentiate two faces of resilience:

- Engineering resilience concentrates on stability near an equilibrium: a steady state where resistance to disturbances and speed of returning to the equilibrium measure the property.
- Ecological resilience emphasises conditions far from any equilibrium or steady state, where instabilities can flip a system (switch) into another regime of behaviour - to another stability domain.

The measure of resilience is the magnitude of disturbances that can be absorbed before the system changes its structure by changing the variables and processes that control behaviour. In ecology, the outcome of the change is not a central issue to be studied. A new balance will naturally arise. The need for reaching the new equilibrium state out of the disturbance is a natural development.

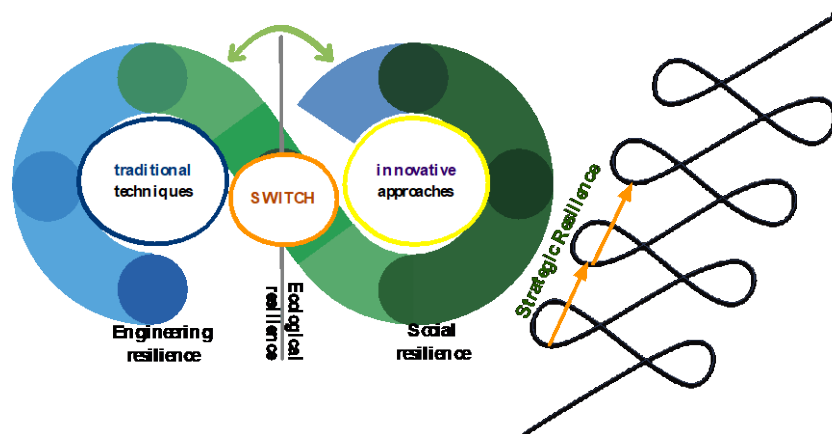


Figure 4: Four types of resilience (own source)

However, in a social-economical setting, resilience has two different roles:

- to influence the ability to find a new state of equilibrium. To distinguish this aspect of the concept of resilience Ensor (2011) introduces a third kind of resilience: Social Resilience.
- Engineering, Ecological and Social resilience focus on relatively short-term change processes. But being aware of the long-term flow of changes, we identify strategic resilience: the capacity to adapt and respond continually to an organisation's ongoing difficulties. It demonstrates the ability to deal with a series of disruptive developments consistently. (Takacs & Abcouwer, 2021)

Combining these four types of resilience brings us to the definition of resilience: the ability of the systems (individual, organisation or even society) to withstand, recover from or adjust to misfortunes or changes in its environment and keep functioning continuously.

The ability to recognise the moment to decide about the current problem-solving approaches that no longer suffice is often underdeveloped in management. As we have seen in the description of the ACoR model, the change between the traditional way of working (left side of the model) to facing challenges (right side) is a separate aspect of organisational change. Unfortunately, this switch often occurs in the so-called ‘gestalt switch’. This sudden flip suggests that we cannot prepare ourselves to switch easily. There is a strong need to invest in recognising the critical signals to know better that the change will come. To realise this change in the short run, is ecological resilience: a process of determining the moment to switch.

Stewardship focuses more on the long-term developments and is an approach to understanding the moment of change and shifting organisational focuses when necessary. Stewarding and working with a diversity of people who are better performing in the different quadrants of the model is also an art of the new leadership for sustainable results. Strategic resilience is the third dimension of the ACoR model. The development requires moving from equilibrium to the next equilibrium and to the next one, etc.

4.3 Sustainable Society

Society, sustainability, and circularity form the overarching principles for the world to survive. This view requires a different perspective on soft elements like culture, values, cooperation and companionship, which gained too little attention in the past decades when individualism was the leading principle. We need to pay more attention to ‘Me-We-All’ and the changing values and objectives of individuals, organisations and communities, not forgetting about our nature to evolve to a sustainable future.

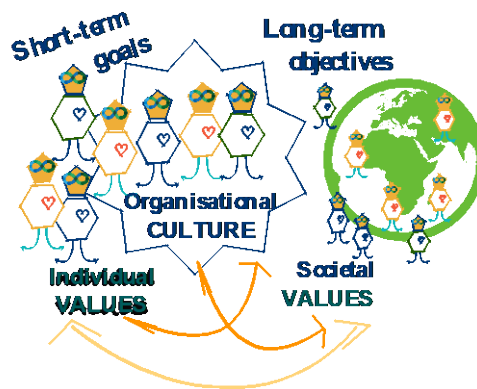


Figure 5: Meeting personal and societal needs (Abcouwer et al., 2022)

Individuals, organisations and society should consider diversity and sustainability in all their actions and decisions. The short-term goals of Individuals must meet with the long-term objectives of our world. Communities and organisations play a significant role in this process. They facilitate the change of individual values towards societal ones and show examples based on their culture created by stewardship.

Reaching traditional goals like profit or growth often refers to questions related to measurable concepts in an absolute way. For example, we can measure the length in meters, weight in kilos, etc. But when we see developments where we formulate goals regarding well-being, sustainability, culture, happiness, health and other immaterial things, making progress takes time to determine.

We find apparent financial, economic, social and other benefits to gain and keep through stewardship, including building a trustful organisation with cooperating people and sharing their knowledge to create a more efficient and sustainable future for ‘Me-We-All’.

5. Conclusion

In our constantly changing time, managers and leaders of organisations must change with the developments. This paper highlighted the significant challenges and introduced an alternative view on the role and basis of leadership in contemporary society. We called this stewardship because diversity and sustainability are the new base for this type of leadership.

With thorough analyses of societal, organisational and individual developments, we suggested that by bringing stewardship in the organisations, we can better:

- balance the different interests of the diverse stakeholders
- understand the need and moment to change

- find their way out from disturbing challenges
- facilitate continuous development
- be innovative and critical to accepted “truths”
- intersect and overlap social identities and combine different root problems to empower everyone with equal opportunities
- collaborate based on shared values
- renew and facilitate life-long learning.

Stewardship is necessary for every organisation which have plans to be successful in the future. These new attitudes of leaders include respecting and considering diversity, equity, cooperation, resilience and sustainability, as described in the article.

References

- Abcouwer, A. W., Takács, E., & Banga, O. P. (2020). *Adaptive Information Management*. A.A.A. & O.
- Abcouwer, A. W., Takács, E., Schilstra, T., & Banga, O. P. (2022). *The Me, We, All Approach - Circular Resilience*. A.A.A. & O.
- Beck, U. (2006). Living in the world risk society. *Economy and Society*, 35(3), 329-345.
- Blair, M. M. (2003). Shareholder value, corporate governance, and corporate performance. *Corporate governance and capital flows in a global economy*, 53-82.
- Dell'Era, C., Magistretti, S., Cautela, C., Verganti, R., & Zurlo, F. (2020). Four kinds of design thinking: From ideating to making, engaging, and criticizing. *Creativity and Innovation Management*, 29(2), 324-344.
- Ensor, J. (2011). *Uncertain Futures: Adapting development to a changing climate*. Practical Action Pub.
- Heene, A. (2002). *Praktijkboek strategie*. Scriptum.
- Herrera, M. E. B. (2016). Social innovation for bridging societal divides: Process or leader? A qualitative comparative analysis. *Journal of Business Research*, 69(11), 5241-5247.
- Holling, C. S., & Gunderson, L. (2002). Resilience and adaptive cycles. In L. Gunderson & C. S. Holling (Eds.), *Panarchy, understanding transformations in human and natural systems* (pp. 25-62). Island Press.
- Hollnagel, E. (2014). *Safety-I and safety-II : the past and future of safety management*. Ashgate Publishing Company.
- Kurzweil, R. (2014). *The singularity is near*. Springer.
- Lunenburg, F. (2013). Leadership versus management: A key distinction - at least in theory. *Main Issues Of Pedagogy And Psychology*, 3(3), 15-18.
- McMillan, C. (2010). Five competitive forces of effective leadership and innovation. *Journal of Business Strategy*, 31(1), 11-22. <https://doi.org/10.1108/02756661011012741>
- Prigogine, I., & Stengers, I. (1987). *Orde uit chaos*. Bert Bakker.
- Reich, R. (2023). Busting the “Paid What You’re Worth” Myth https://www.youtube.com/watch?v=f3NRbF_IJZI
- Runyan, A. S. (2018). What is intersectionality and why is it important? *Academe*, 104(6), 10-14.
- Sheldrake, R. (2012). *The Science Delusion: Freeing the Spirit of Enquiry (NEW EDITION)*. Hachette UK.
- Sowell, T., & Friedman, M. (1981). *Markets and minorities*. Basic Books New York.
- Sowell, T., & Weiner, T. (2010). *Race and culture*. Blackstone Audio, Incorporated.
- Takacs, E., & Abcouwer, A. W. (2021, December 11 - 12 2021). Resilience, people and Information, a Triangle to build Sustainability. 2021 SIGED International Conference on Information Systems Education and Research, Austin Texas/online.
- Westley, F. (2002). The Devil in the Dynamics: Adaptive Management on the Front Lines. In L. H. Gunderson & C. S. Holling (Eds.), *Panarchy* (pp. 333-360). Island Press.
- White, C. (2013). *The science delusion: Asking the big questions in a culture of easy answers*. Melville House.

Spiritual Leadership and Meaningful Work: The Roles of Intrinsic Motivation and Gender

Fidelis Udahemuka¹, Fred Walumbwa² and Ben Ngoye¹

¹Strathmore Business School, Strathmore University, Nairobi, Kenya

²Florida International University, College of Business, Miami USA

udafidelis@gmail.com

owalumbw@fiu.edu

BNgoye@strathmore.edu

Abstract: In recent years, many employees have come to view their work not only as a means to earn a living but also as a source of personal fulfillment and purpose. This shift in perception is driven by various factors, including changes in societal values and the human desire to make a difference in the world. As such, organizations with insufficient knowledge of employees' need for meaningful work suffer reduced performance and productivity, higher employee turnover, and employees' physical and mental work-related health conditions. Although prior studies have found that spiritual leadership positively and significantly influences employees' meaningful work, relatively little is known about the underlying mechanism and the condition under which this relationship occurs. This empirical study aims to investigate how and when spiritual leadership relates to employees' meaningful work focusing on intrinsic motivation as a mediator and employee gender as a moderator using data from employees of public and private commercial banks in Kenya. The study's cross-sectional design adopted a self-reported data collection approach. The banks were stratified into three tiers: 1, 2, and 3, and 532 questionnaires were distributed to randomly selected respondents from the tiers, and 448 valid responses were received. A semi-structural equation modeling using SmartPLS 4 was used to analyze the data. The results reveal that spiritual leadership, directly and indirectly, impacts meaningful work partially mediated by intrinsic motivation, while gender moderates this relationship. The study contributes to theory by examining intrinsic motivation and gender as the underlying mechanisms of how and when spiritual leadership translates into employees' meaningful work. Practically, the findings suggest that incorporating spiritual leadership as a potential leader behavior in the banking sector and paying attention to employees' gender can improve the perception of meaningful work, which has been found to relate to employees' well-being and positive job outcomes. Implications of our findings and recommendations for future research are further discussed.

Keywords: Spiritual leadership, Meaningful work, Intrinsic motivation, Gender

1. Introduction

In today's dynamic and competitive business environment, the concept of meaningful work—defined as the perception of fulfillment, personal growth, and connection between one's job and broader goals or values—and its influencing factors hold significant importance among researchers and practitioners (Bailey *et al.*, 2019; Lips-Wiersma, Haar and Wright, 2020). This importance is attributed to the changing perception of employees, who now perceive their work not only as a source of livelihood but also as an opportunity for personal significance, satisfaction, and creating a positive impact in the world (Frémeaux and Pavageau, 2020; Kubiak, 2022). Consequently, organizations must cultivate a work environment and adopt leadership practices that foster employees' sense of purpose and meaning in their work, as employees' perception of meaningful work is vital for the long-term sustainability of organizations (Steger and Dik, 2009, 2010; Haque *et al.*, 2021).

Existing research has demonstrated a significant correlation between employees' perception of meaningful work and various positive outcomes, including life satisfaction, a heightened engagement, a sense of accomplishment, a positive self-concept, intrinsic motivation, organizational commitment, and healthy physical, emotional, and psychological stability (Allan *et al.*, 2019; Widodo and Suryosukmono, 2021; You *et al.*, 2021). On the contrary, a lack of meaningful work has been associated with reduced motivation, reduced productivity, suboptimal performance, job dissatisfaction, job burnout, high levels of employee turnover, and physical, emotional, and psychological work-related health conditions, (Bailey *et al.*, 2017, 2019; Hunsaker, 2019; Haque *et al.*, 2021).

Studies have also indicated that leadership plays a significant role in predicting and enhancing employee perception of meaningful work (Frémeaux and Pavageau, 2022). Specifically, the research has accentuated the important role of leadership in clarifying and fostering employees' experience of meaningful work (Lysova *et al.*, 2019). Leadership attributes and practices like listening, honesty, attention, conscience, and empathy have been linked with the leaders' success in creating a work environment that supports employees' pursuit and experience of meaningful work (Frémeaux and Pavageau, 2022). In this context, spiritual leadership—typified

by vision, hope/faith, and altruistic love—emerges as a potential leadership paradigm for understanding how different leadership can enhance meaningful work (Allan *et al.*, 2019). Specifically, research suggests that spiritual leadership positively influence employee meaningful work (Baykal, 2019; Widodo and Suryosukmono, 2021) by promoting calling (purpose in life) and membership (mutual support, care, and appreciation) (Fry, 2008; Yang, Huang and Wu, 2019).

However, relatively little is known about how and when spiritual leadership influences employees' perception of meaningful work (Bailey *et al.*, 2019). Particularly, there is a dearth of knowledge regarding the mechanisms and underlying conditions, for instance, individual attributes like gender, through which spiritual leadership impacts employees' experience of meaningful work (Oh and Wang, 2020). Therefore, it is imperative to investigate further how spiritual leadership relates to employees' perception of meaningful work and the determinants of this perception within the organizational context (Bailey *et al.*, 2019).

This study aims to investigate how and when spiritual leadership influences employees' perception of meaningful work, with a specific focus on examining the mediating role of intrinsic motivation and the moderating influence of employee gender in the relationship. This study draws data from employees working in public and private commercial banks in Kenya. The banking sector is known for prevalent work-related employees' physical, emotional, and psychological issues (Hunsaker, 2019; Iqbal and Zaidi, 2021).

The study contributes to spiritual leadership and employees' meaningful work literature by examining intrinsic motivation and gender differences as the underlying mechanisms of how and when spiritual leadership translates into employees' meaningful work. Practically, the findings suggest that incorporating spiritual leadership as a potential leader behavior in the banking sector and paying attention to employees' gender can improve the perception of meaningful work, which has been found to relate to employees' well-being and positive job outcomes (Allan *et al.*, 2019).

The structure of the study is as follows. It begins with a discussion of the theoretical foundation and hypothesis development. Then, it presents the research design/methodology, followed by the results, discussion, and conclusion.

2. Theoretical Foundation

This study is anchored on self-determination theory (SDT), which posits that individuals have three fundamental psychological needs: autonomy, competence, and relatedness (Deci and Ryan, 1985). Autonomy refers to the desire for freedom and self-determination in engaging in activities aligned with personal values and interests (Gagné and Deci, 2005). Whereas Competence involves the pursuit of mastery, confidence, and achievement in challenging tasks that are considered meaningful (Deci and Ryan, 2000), relatedness refers to the need for meaningful connections and a sense of belonging within a group or organization (Deci and Ryan, 1980, 1985). SDT distinguishes between autonomous or self-determination, driven by personal choice and intrinsic interests and controlled motivation influenced by external factors (Deci and Ryan, 1985). Autonomous motivation has been associated with positive outcomes, such as improved performance and greater job satisfaction and overall well-being (Ryan and Deci, 2000; Yang, Yang and Gao, 2020; Haque *et al.*, 2021), while controlled motivation has been linked with adverse outcomes, including reduced efforts, lower job satisfaction, and work-related physical and mental maladies (Deci and Ryan, 1985, 2000).

3. Spiritual Leadership

The theory of spiritual leadership is a value-based motivation theory that emphasizes the importance of leaders' values, attitudes, and behaviors in fostering intrinsic motivation among leaders and their followers (Fry, 2003). This theory comprises Vision, hope/faith, and altruistic love. Vision denotes a compelling and meaningful future aspiration that guides leaders and followers (Fry, 2003; Kouzes and Posner, 2023). Hope/faith signifies leaders' positive outlook and unwavering belief in the vision, which inspires and motivates followers to work toward its realization (Fry, 2003, 2008). Altruistic love represents leaders prioritizing the well-being of their followers and demonstrating genuine care and concern for their social and professional well-being (Fry *et al.*, 2017). Altruistic love is typified by selflessness and the intention to empower others, and it is built upon the values of integrity, appreciation, compassion, persistence, modesty, acceptance, and unwavering conviction (Fry, 2003; Haque *et al.*, 2021). These values stimulate the leaders' behavior and contribute to a positive and constructive work environment that facilitates employees' experience of meaningful work (Fry *et al.*, 2017; Joelle and Coelho, 2019).

From the context of SDT, employees who feel a sense of autonomy in their work are more likely to perceive the work as interesting, important, and purposeful (Yang *et al.*, 2020). Through their altruistic attitude, spiritual leaders can instill confidence in the organization's vision among employees (Fry *et al.*, 2017). By exemplifying spiritual leadership behaviors such as care and inspiration, leaders are likely to satisfy employees' need for autonomy, thereby enhancing their perception of meaningful work (Zhang and Yang, 2020).

4. Spiritual Leadership and Employees' Perception of Meaningful Work

Meaningful work signifies the satisfaction and sense of accomplishment individuals derive from performing and completing their work (Thory, 2016; Jeon and Choi, 2020). It also delineates the belief that their work has a purpose, brings personal significance, and makes a difference in the lives of others (Lysova *et al.*, 2019). In leadership, the literature supports the proposition that leaders' behavior is an important factor that predicts the employees' sense of meaningful work (Steger and Dik, 2009). Particularly, the literature indicates that spiritual leadership predicts employees' perception of meaningful work (Widodo and Suryosukmono, 2021). Spiritual leadership theory provides a significant perspective on how spiritual leaders can influence their followers' or employees' experience of meaningful work (Fry *et al.*, 2017; Zhang and Yang, 2020). According to the theory, when leaders communicate and promote a meaningful vision for the organization, they motivate employees by inspiring a sense of calling (purpose) and membership (sense of belonging) cultivated by the feeling that their work is meaningful and impactful, particularly in promoting the wellbeing of others (Zhang and Yang, 2020). Furthermore, the altruistic characteristics of spiritual leaders create a work environment that fosters a strong sense of belonging, understanding, appreciation, and support among employees, thus reinforcing the employees' sense of belonging, thereby inspiring their experience of meaningful work (Fry, 2003; Hunsaker, 2021).

In support of the above arguments, in a study involving 150 employees in the city of Bengkulu, Indonesia, it was established that spiritual leadership positively and significantly impacted employees' meaningful work (Widodo and Suryosukmono, 2021). Another research involving 190 Turkish academicians revealed that spiritual leadership significantly impacted work meaningfulness, which also partially mediated the influence of spiritual leadership on organizational commitment (Baykal, 2019). Given the preceding discussions, we propose the following hypothesis:

H₁: Spiritual leadership positively relates to employees' perception of meaningful work.

5. The Mediating Role of Intrinsic Motivation in Spiritual Leadership and Meaningful Work Relationship

Intrinsic motivation refers to the internal drive to engage in an activity purely for the inherent satisfaction, enjoyment, and personal fulfillment it brings rather than for external rewards or pressure (Bawuro *et al.*, 2019; Deci and Ryan, 1985; Fishbach and Woolley, 2022). It signifies the enthusiasm and commitment to the task arising from one's desires, interests, and values in the tasks (Guo *et al.*, 2014). Extant literature indicates that intrinsic motivation contributes positively to individual well-being and organizational success; it plays a significant role in fostering creativity, long-term engagement, personal development, and overall satisfaction in one's work (Jeon and Choi, 2020; Nehra *et al.*, 2023; Wang *et al.*, 2019). Drawing on SDT, we contend that spiritual leadership influences employees' intrinsic motivation, which, in return, influences employees' perception of meaningful work. Spiritual leaders who articulate a significant vision and emphasize employees' contributions to the realization of the goal foster employees' intrinsic motivation, which would lead to employees' increased engagement in their work, job satisfaction, and a sense of fulfillment from the work (Bawuro *et al.*, 2019; Chalofsky and Krishna, 2009; Haque *et al.*, 2021).

Similarly, we posit that spiritual leaders foster intrinsic motivation by instilling faith and hope in the followers, boosting their confidence to overcome challenges and achieve organizational goals (Afsar, Badir and Kiani, 2016; Fry *et al.*, 2017). Also, through altruistic love, spiritual leaders can create a sense of belonging and ownership, thus fulfilling the followers' need for relatedness, which is central to intrinsic motivation (Deci and Ryan, 2012). Also, empirical studies have confirmed that spiritual leadership influences intrinsic motivation. For instance, a study based on 130 hospital employees in Indonesia established that spiritual leadership significantly correlates with intrinsic motivation (Sugiardi, 2021). Yet, another study examining data from 427 employees of private banks in Pakistan found that spiritual leadership has a positive and significant effect on intrinsic motivation and workplace spirituality (Iqbal and Zaidi, 2021). Based on Fry and colleagues (Fry, 2003; Fry *et al.*, 2017), spiritual leaders' altruism can create mutual support between the leaders and followers, leading to intrinsic motivation, and, in return, enhances the followers' self-esteem, purpose, and job

satisfaction, typical of outcomes of perceived meaningfulness (Hunsaker, 2020). Given the above discussions, we propose the following hypotheses:

H₂: Spiritual leadership positively relates to intrinsic motivation.

H₃: Intrinsic motivation positively relates to employees' perception of meaningful work.

H₄: Intrinsic motivation mediates the relationship between spiritual leadership and employees' meaningful work.

6. The Moderating Effect of Gender Differences

Studies have found that gender (i.e., female vs. male) plays a significant role in the perception of leadership behavior (Dastane, 2020). Specifically, Dastane examined data from 211 employees of a multinational corporation in Malaysia and found that the impact of transformational leadership was stronger in males than in female employees. On the contrary, the effect of laissez-faire leadership on employees' performance was more pronounced in females than in males. Consistent with previous literature, we posit that gender is an important underlying factor that influences the effects of spiritual leadership on employees' meaningful work, thus suggesting the following hypothesis:

H₅: Gender moderates the impact of spiritual leadership on employees' perception of meaningful work, such that being female strengthens the relationship while being male reduces it.

Figure 1 presents the study's conceptual framework and hypotheses.

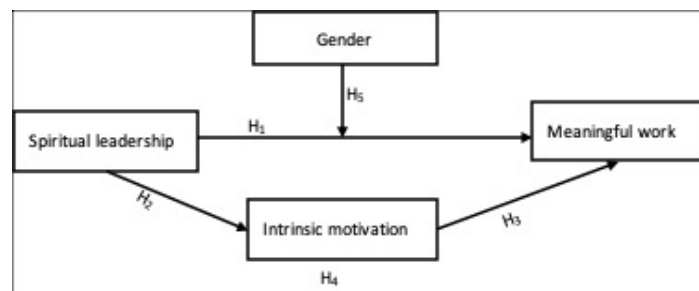


Figure 1: Conceptual Framework

7. Methodology

Data for this study came from employees of commercial banks in Kenya and were collected using a survey questionnaire we developed using KoBoToolBox and distributed to participants via email and WhatsApp. We used a stratified sampling technique to determine the proportion of the banks by their categories based on their weighted composite index (WCI), encompassing net assets, customer deposits, capital and reserves, as well as the deposit and loan accounts. Specifically, banks were classified into three tiers based on their WCI values: Large (aka tier 1) comprised those with a WCI above 5%, medium (aka tier 2) are those with a WCI ranging between 1% and 5%, and small size (aka tier 3) encompasses those with a WCI lower than 1% (CBK, 2022). We then randomly selected participants from banks in each tier. Out of a sample of 532 participants, 448 valid responses were received, representing an 84.2% response rate.

The respondents' profiles show that 52% were male and 48% were female. Age stratification ranged between 19 and 57 years. Their academic qualifications were secondary school level (0.7%), college certificates and diplomas (6%), undergraduate degree (62.3%), and postgraduate (31%). In terms of roles held in the banks, 46.2% held managerial positions, whereas the rest held supervisory, clerical, and other responsibilities. The work experience indicates that 33.7% had worked for their respective bank for less than 5 years, 33.5% for 5-10 years, 24.1% for 10-15 years, 5.4% for 15-20 years, and 3.3% above 20 years.

To operationalize the variables of this study, we adapted measurements from previous research and used a 6-point Likert-type scale (1=strongly disagree to 6= strongly agree) to measure the variables. Spiritual leadership was measured using (Fry, 2008) scale consisting of 14 statements, including the item "My leader understands and is committed to his/her vision." Intrinsic motivation was measured using three items from Grant's (2008) scale, with a sample item being "I enjoy the work I do because it is fun." Employees' perception of meaningful work was measured using a scale from Fry (2008) consisting of six statements, with the sample item "My job activities are personally meaningful to me," and "The work I do makes a difference in people's lives."

We conducted confirmatory factor analysis using SmartPLS 4.0 version to assess the validity, reliability, and collinearity of our data. To achieve convergent validity and composite reliability, we followed the guidelines that Cronbach's alpha and composite measures should be above 0.70 (Sheko and Spaho, 2018) and for discriminant valid, the average variance extracted (AVE) should exceed 0.5 (Hair, 2014). Our results met the required threshold values, indicating validity and reliability. Table 1 presents the reliability, discriminant, and convergent validity results.

Table 1: Reliability, Discriminant, and convergent validity results

Construct	Factor loading	Cronbach α	Average Variance Extracted (AVE)	Composite Reliability (CR)
Employees' Meaningful Work (EMW)		0.951	0.765	0.952
EMW01	0.876			
EMW02	0.847			
EMW03	0.919			
EMW04	0.843			
EMW05	0.835			
EMW06	0.924			
Intrinsic Motivation (IM)		0.932	0.776	0.934
IM01	0.907			
IM02	0.826			
IM03	0.889			
IM04	0.901			
Spiritual Leadership (SL)		0.970	0.694	0.970
SL01	0.808			
SL02	0.773			
SL03	0.821			
SL04	0.787			
SL05	0.834			
SL06	0.884			
SL07	0.899			
SL08	0.903			
SL09	0.871			
SL10	0.758			
SL11	0.829			
SL12	0.880			
SL13	0.784			
SL14	0.815			

After ascertaining the reliability and validity of the measurement model, we further assessed the significance of the correlation coefficients using a bootstrapping procedure with 5000 subsamples from the original data, and a stepwise mean analysis to test the hypothesis. The results showed that all the direct relationships are positive and significant, thus supporting Hypotheses 1, 2, and 3. Moreover, the results indicated positive and significant intervening effects of intrinsic motivation in the relationship between spiritual leadership and

intrinsic motivation ($\beta = 0.581, p < 0.01$), supporting Hypothesis 4 that intrinsic motivation mediates the relationship between spiritual leadership and employees' perception of meaningful work.

To assess the moderating effects of gender on the relationship between spiritual leadership and employees' perceptions of meaningful work, we estimated models 1, 2, and 3, as presented in Table III. Model 1 incorporates the control variables that influence employees' perceptions of meaningful work. Model 2 includes our variables of interest – spiritual leadership and gender—to assess their individual influence on employees' perceptions of meaningful work in the presence of the control variables to prevent bias. Model 3 includes the interaction term of spiritual leadership and gender to ascertain the moderating effect of gender on the relationship between spiritual leadership and employees' perceptions of meaningful work. The results showed that both spiritual leadership ($\beta = 0.696, p < 0.01$) and gender ($\beta = 0.111, p < 0.05$) have a positive and significant impact on employees' perception of meaningful work, while the interaction of spiritual leadership and gender ($\beta = -0.275, p < 0.01$) on the relationship between spiritual leadership and meaningful work was negative. Table 2 presents the details of mediation and moderation results.

Table 2: Mediation effects

Mediation test	Path coefficient		Decision
	Direct without a mediator	Direct with IM as the mediator	
H ₁ : SL -> EMW	0.725*** (0.043)	0.143** (0.065)	Supported
H ₂ : SL -> IM	0.756*** (0.036)	0.757*** (0.036)	Supported
H ₃ : IM -> EMW	0.876*** (0.021)	0.768*** (0.059)	Supported
H ₄ : SL -> IM -> EMW		0.581*** (0.052)	Partial Mediation

Table 3: Moderating effects of employees' gender

Variable	Model 1	Model 2	Model 3
Age	0.101 (0.096)	0.063* (0.050)	0.062* (0.048)
Education	0.061 (0.051)	0.043* (0.032)	0.053** (0.031)
Tenure	-0.075 (0.073)	-0.062 (0.053)	-0.057 (0.051)
SL		0.696*** (0.043)	0.826*** (0.064)
Gender		0.111** (0.067)	0.112** (0.068)
SL * Gender			-0.275*** (0.119)

* $p < 0.1$, ** $p < 0.05$ and *** $p < 0.01$ denotes confidence level of 10%, 5% and 1%, respectively.

To further illustrate the moderating effect of gender, we used the Process Method for simple slope analysis. The results indicated that the increase in spiritual leadership has a greater effect on female employees' experience of meaningful work than male employees. This further supports Hypothesis 5, that employees' gender moderates the influence of spiritual leadership on employees' perception of meaningful work, such

that the effect increases among female employees and diminishes among male employees. Figure 2 shows the nature and form of interaction.

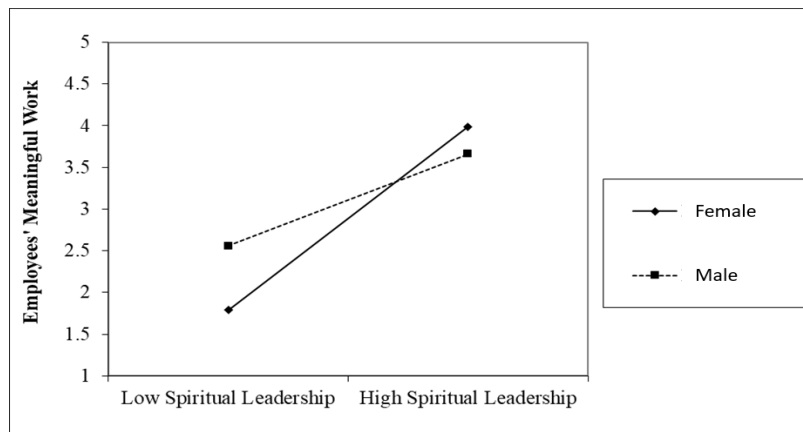


Figure 2: Gender moderation slope

8. Discussion and Conclusion

The purpose of this study was to investigate the mediating role of intrinsic motivation and the moderating effect of gender in the relationship between spiritual leadership and employees' perception of meaningful work. The results reveal that spiritual leadership influences employees' experience of meaningful work, and intrinsic motivation partially mediates the relationship. These findings confirm the conceptualization that spiritual leadership satisfies the human quest for purpose in life and the quest for well-being (Fry, 2003). The study also establishes the moderating effect of gender in the relationship, with female employees responding more positively to spiritual leadership than their male counterparts. This affirms the arguments that individual characteristics such as gender may have a significant influence on leadership styles (Dastane, 2020) and leadership outcomes (Oh and Wang, 2020).

This study contributes to spiritual leadership research by highlighting the intervening role of intrinsic motivation and interactive effects of gender in the relationship between spiritual leadership and individual outcomes (Oh and Wang, 2020; Widodo and Suryosukmono, 2021). Practically, the results of this study suggest that managers can enhance their employees' experience of meaningful work by including spiritual leadership perspectives in their leadership kit. Managers and practitioners can seek to develop attitudes, skills, and competencies related to these traits—a sense of meaning, purpose, autonomy, competence, and positive relationships, given their positive influence on employee engagement and performance.

This study, however, has some limitations. Due to time and resource constraints, this study focused only on a few studied variables. Future studies should explore other outcomes, including additional mediating and moderating constructs. Also, the study was cross-sectional, thus raising the issue of inverted relationships (Zhang and Yang, 2020). Future studies should consider longitudinal surveys. Finally, the data for this study came from the banking sector in Kenya. Future research should consider other sectors of the economy and context to enhance the generalizability of the results.

References

- Afsar, B., Badir, Y. and Kiani, U.S. (2016) "Linking Spiritual Leadership and Employee Pro-environmental Behavior: The Influence of Workplace Spirituality, Intrinsic Motivation, and Environmental Passion", *Journal of Environmental Psychology* 45:79–88., 45, pp. 79–88. Available at: <https://doi.org/10.1016/j.jenvp.2015.11.011>.
- Allan, B.A. et al. (2019) "Outcomes of Meaningful Work: A Meta-Analysis.", *Journal of Management Studies*, 56(3), pp. 500–528. Available at: <https://doi.org/10.1111/joms.12406>.
- Bailey, C. et al. (2017) "The Mismanaged Soul: Existential Labor and The Erosion of Meaningful Work", *Human Resource Management Review*, 27(3), pp. 416–430. Available at: <https://doi.org/10.1016/j.hrmr.2016.11.001>.
- Bailey, C. et al. (2019) "A Review of the Empirical Literature on Meaningful Work: Progress and Research Agenda", *Human Resource Development Review*, 18(1), pp. 83–113. Available at: <https://doi.org/10.1177/1534484318804653>.
- Bawuro, F.A. et al. (2019) "Mediating Role of Meaningful Work in the Relationship between Intrinsic Motivation and Innovative Work Behaviour", 8(09), p. 10.

- Baykal, E. (2019) "Creating Organizational Commitment Through Spiritual Leadership: Mediating Effect of Meaning at Work", *Business & Management Studies: An International Journal*, 7(2), pp. 837–855. Available at: <https://doi.org/10.15295/bmij.v7i2.1113>.
- Chalofsky, N. and Krishna, V. (2009) "Meaningfulness, Commitment, and Engagement: The Intersection of a Deeper Level of Intrinsic Motivation", *Advances in Developing Human Resources*, 11(2), pp. 189–203. Available at: <https://doi.org/10.1177/1523422309333147>.
- CBK. (2022). *Central Bank of Kenya directory of licensed commercial banks, mortgage finance institutions, and authorized non-operating companies*. <https://www.centralbank.go.ke/wp-content/uploads/2016/06/Directory-of-Licensed-Commercial-Banks-Mortgage-Finance-Institutions-and-NOHCs-1.pdf>
- CBK (2022). *Bank Supervisory Annual Report 2022*. https://www.centralbank.go.ke/uploads/banking_sector_annual_reports/1620216033_2022%20Annual%20Report.pdf
- Dastane, O. (2020) "Impact of Leadership Styles on Employee Performance: A Moderating Role of Gender", *Australian Journal of Business and Management Research*, 5(12), pp. 27–52. Available at: <https://doi.org/10.52283/NSWRCA.AJBMR.20210512A03>.
- Deci, E.L. and Ryan, R.M. (1980) "The Empirical Exploration of Intrinsic Motivational Processes", in *Advances in Experimental Social Psychology*. New York, NY: Academic Press, pp. 39–80.
- Deci, E.L. and Ryan, R.M. (1985) "The General Causality Orientations Scale: Self-Determination in Personality", *Journal of Research in Personality*, 19(2), pp. 109–134. Available at: [https://doi.org/10.1016/0092-6566\(85\)90023-6](https://doi.org/10.1016/0092-6566(85)90023-6).
- Deci, E.L. and Ryan, R.M. (2000) "The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior", *Psychological Inquiry*, 11(4), pp. 227–268. Available at: https://doi.org/10.1207/S15327965PLI1104_01.
- Deci, E.L. and Ryan, R.M. (2012) "Motivation, Personality, and Development Within Embedded Social Contexts: An Overview of Self-Determination Theory", in Deci, E. L. and Ryan, R. M., *The Oxford Handbook of Human Motivation*. Edited by R. M. Ryan. Oxford University Press, pp. 84–108. Available at: <https://doi.org/10.1093/oxfordhb/9780195399820.013.0006>.
- Fishbach, A. and Woolley, K. (2022) "The Structure of Intrinsic Motivation", *Annual Review of Organizational Psychology and Organizational Behavior*, 9(1), pp. 339–363. Available at: <https://doi.org/10.1146/annurev-orgpsych-012420-091122>.
- Frémeaux, S. and Pavageau, B. (2020) "Meaningful Leadership: How Can Leaders Contribute to Meaningful Work?", *Journal of Management Inquiry*, p. 105649261989712. Available at: <https://doi.org/10.1177/1056492619897126>.
- Fry, L.W. (2003) "Toward a Theory of Spiritual Leadership.", *The Leadership Quarterly*, 14(16), pp. 693–727.
- Fry, L.W. (2008) "Spiritual Leadership: State-of-the-Art and Future Directions for Theory, Research, and Practice", in J. Biberman and L. Tischler (eds) *Spirituality in Business*. New York: Palgrave Macmillan US, pp. 106–124. Available at: https://doi.org/10.1057/9780230611887_7.
- Fry, L.W. et al. (2017) "Spiritual Leadership as A Model for Performance Excellence: A Study of Baldrige Award Recipients", *Journal of Management, Spirituality & Religion*, 14(1), pp. 22–47. Available at: <https://doi.org/10.1080/14766086.2016.1202130>.
- Gagné, M. and Deci, E.L. (2005) "Self-Determination Theory and Work Motivation: Self-Determination Theory and Work Motivation", *Journal of Organizational Behavior*, 26(4), pp. 331–362. Available at: <https://doi.org/10.1002/job.322>.
- Grant, A.M. (2008) "Does Intrinsic Motivation Fuel the Prosocial Fire? Motivational Synergy in Predicting Persistence, Performance, And Productivity.", *Journal of Applied Psychology*, 93(1), pp. 48–58.
- Guo, Y. et al. (2014) "The Mediating Role of Intrinsic Motivation on the Relationship Between Developmental Feedback and Employee Job Performance", *Social Behavior and Personality: an international journal*, 42(5), pp. 731–741. Available at: <https://doi.org/10.2224/sbp.2014.42.5.731>.
- Hair, J.F. (ed.) (2014) *Multivariate data analysis*. 7. ed., Pearson new internat. ed. Harlow: Pearson (Pearson custom library).
- Haque, M.J. et al. (2021) "Spiritual Leadership and Unit Productivity: Does Psychological Need Mediate the Relationship between Spiritual Leadership and Unit Productivity?", *Public Integrity*, pp. 1–14. Available at: <https://doi.org/10.1080/10999922.2021.1957271>.
- Hunsaker, W.D. (2019) "Spiritual Leadership and Job Burnout: Mediating Effects of Employee Well-Being and Life Satisfaction", *Management Science Letters*, pp. 1257–1268. Available at: <https://doi.org/10.5267/j.msl.2019.4.016>.
- Hunsaker, W.D. (2020) "Spiritual Leadership and Employee Innovation", *Current Psychology* [Preprint]. Available at: <https://doi.org/10.1007/s12144-020-01011-9>.
- Hunsaker, W.D. (2021) "Spiritual Leadership and Work–Family Conflict: Mediating Effects of Employee Well-Being", *Personnel Review*, 50(1), pp. 143–158. Available at: <https://doi.org/10.1108/PR-04-2019-0143>.
- Iqbal, F. and Zaidi, M.Z. (2021) "Consequences of Spiritual Leadership: A Moderating Model of Organizational Performance", 16(2).
- Jabbar, A. and Kusumastuti, R. (2017) "The Influence of Spiritual Leadership on Organizational Culture at Bank Syariah Mandiri Branch Office and Sub Branch Office Depok", *Policy & Governance Review*, 1(1), p. 69. Available at: <https://doi.org/10.30589/pgr.v1i1.34>.
- Jeon, K.S. and Choi, B.K. (2020) "A Multidimensional Analysis of Spiritual Leadership, Affective Commitment and Employees' Creativity in South Korea", *Leadership & Organization Development Journal*, 41(8), pp. 1035–1052. Available at: <https://doi.org/10.1108/LODJ-08-2019-0352>.

- Joelle, M. and Coelho, A. (2019) "The Impact of a Spiritual Environment on Performance Mediated by Job Resourcefulness", *International Journal of Workplace Health Management*, 12(4), pp. 267–286. Available at: <https://doi.org/10.1108/IJWHM-05-2018-0058>.
- Kouzes, J.M. and Posner, B.Z. (2023) *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*. Seventh. New Jersey: John Wiley & Sons, Inc.
- Kubiak, E. (2022) "Increasing Perceived Work Meaningfulness by Implementing Psychological Need-Satisfying Performance Management Practices", *Human Resource Management Review*, 32(3), p. 100792. Available at: <https://doi.org/10.1016/j.hrmr.2020.100792>.
- Lips-Wiersma, M., Haar, J. and Wright, S. (2020) "The Effect of Fairness, Responsible Leadership and Worthy Work on Multiple Dimensions of Meaningful Work", *Journal of Business Ethics*, 161(1), pp. 35–52. Available at: <https://doi.org/10.1007/s10551-018-3967-2>.
- Lysova, E.I. et al. (2019) "Fostering Meaningful Work in Organizations: A Multi-Level Review and Integration", *Journal of Vocational Behavior*, 110, pp. 374–389. Available at: <https://doi.org/10.1016/j.jvb.2018.07.004>.
- Nehra, N.S. et al. (2023) "Can Intrinsic Motivation Be Attained Through Psychological Detachment and Job Crafting: The Mediating Role of Emotional Stability", *Evidence-based HRM: a Global Forum for Empirical Scholarship* [Preprint]. Available at: <https://doi.org/10.1108/EBHRM-07-2021-0142>.
- Oh, J. and Wang, J. (2020) "Spiritual Leadership: Current Status and Agenda for Future Research and Practice", *Journal of Management, Spirituality & Religion*, 17(3), pp. 223–248. Available at: <https://doi.org/10.1080/14766086.2020.1728568>.
- Ryan, R.M. and Deci, E.L. (2000) "Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions", *Contemporary Educational Psychology*, 25(1), pp. 54–67. Available at: <https://doi.org/10.1006/ceps.1999.1020>.
- Sheko, A. and Spaho, A.B. (2018) "Information Technology Inhibitors and Information Quality in Supply Chain Management: A PLS-SEM Analysis", *Academic Journal of Interdisciplinary Studies*, 7(3), pp. 125–138. Available at: <https://doi.org/10.2478/ajis-2018-0064>.
- Steger, M.F. and Dik, B.J. (2009) "If One is Looking for Meaning in Life, does it Help to Find Meaning in Work?", *Applied Psychology: Health and Well-Being*, 1(3), pp. 303–320. Available at: <https://doi.org/10.1111/j.1758-0854.2009.01018.x>.
- Steger, M.F. and Dik, B.J. (2010) "Work as Meaning: Individual and Organizational Benefits of Engaging in Meaningful Work.", in P. A. Linley, S. Harrington, & Garcea (Eds), *Oxford Library of Psychology. Oxford Handbook of positive psychology and work*. Oxford University Press, pp. 131–142.
- Sugiardi, A. (2021) "The Urgence of The Role of Spiritual Leadership on Intrinsic Motivation and Organizational Commitment and Their Impact on Job Satisfaction", *Journal of Islamic Economic Business*, 2(1), pp. 73–96. Available at: <https://doi.org/28944/assyarikah.v2i1.714>.
- Thory, K. (2016) "Developing Meaningfulness at Work Through Emotional Intelligence Training: Developing Meaningfulness at Work", *International Journal of Training and Development*, 20(1), pp. 58–77. Available at: <https://doi.org/10.1111/ijtd.12069>.
- Wang, M. et al. (2019) "The Effect of Spiritual Leadership on Employee Effectiveness: An Intrinsic Motivation Perspective", *Frontiers in Psychology*, 9, p. 2627. Available at: <https://doi.org/10.3389/fpsyg.2018.02627>.
- Widodo, S. and Suryosukmono, G. (2021) "Spiritual Leadership, Workplace Spirituality and Their Effects on Meaningful Work: Self-Transcendence as Mediator Role", *Management Science Letters*, pp. 2115–2126. Available at: <https://doi.org/10.5267/j.msl.2021.2.016>.
- Yang, F., Huang, X. and Wu, L. (2019) "Experiencing Meaningfulness Climate in Teams: How Spiritual Leadership Enhances Team Effectiveness When Facing Uncertain Tasks", *Human Resource Management*, 58(2), pp. 155–168. Available at: <https://doi.org/10.1002/hrm.21943>.
- Yang, J. et al. (2020) "The Chain Mediation Effect of Spiritual Leadership on Employees' Innovative Behavior", *Leadership & Organization Development Journal*, 42(1), pp. 114–129. Available at: <https://doi.org/10.1108/LODJ-10-2019-0442>.
- Yang, J., Yang, F. and Gao, N. (2020) "Enhancing Career Satisfaction: The Roles of Spiritual Leadership, Basic Need Satisfaction, and Power Distance Orientation", *Current Psychology* [Preprint]. Available at: <https://doi.org/10.1007/s12144-020-00712-5>.
- You, J. et al. (2021) "Conceptualizing Meaningful Work and Its Implications For HRD", *European Journal of Training and Development*, 45(1), pp. 36–52. Available at: <https://doi.org/10.1108/EJTD-01-2020-0005>.
- Zhang, Y. and Yang, F. (2020) "How and When Spiritual Leadership Enhances Employee Innovative Behavior", *Personnel Review*, 50(2), pp. 596–609. Available at: <https://doi.org/10.1108/PR-07-2019-0346>.

Corporate Social Responsibility Latin America: A Systematic Review and Future Research Agenda

Damari Jomara Usuriaga-Medrano¹, Ines Farro-Portocarrero¹, Gisela Analy Fernandez-Hurtado¹ and Franklin Cordova-Buiza^{2,3}

¹Business Faculty, Universidad Privada del Norte, Lima, Peru

²Research, Innovation and Social Responsibility Department, Universidad Privada del Norte, Lima, Peru

³Faculty of Business Sciences, Universidad Continental, Huancayo, Peru

damarijomara21@gmail.com

inesfarro10portocarrero20@gmail.com

gisela.fernandez@upn.edu.pe

franklin.cordova@upn.edu.pe

Abstract: This research topic studies the main implications and approaches of social responsibility in Latin American companies, and becomes a topic of great importance due to the need of many organizations to transcend and differentiate themselves with their target audience, promoting inclusive and sustainable growth, managed by policies that promote welfare and development. The databases used for this systematic review were Dialnet, Scielo, Redalyc and Scopus, using information from 2012 to 2022; likewise, the method used was the search of empirical literature with the analysis of descriptive designs and quantitative and qualitative methodological approaches. On the other hand, the country with the highest number of studies on the subject was Mexico with 24%, followed by Colombia with 20%; likewise, descriptive and explanatory studies of quantitative type are addressed; and among the populations with the highest study implication are companies in the commercial and productive area. Finally, the objective of this study is to determine the factors that induce Latin American companies to apply corporate social responsibility; one such factor being environmental leadership, as the main finding, which seeks to maintain standards of image and acceptance in the market that differentiate it from the competition; the next factor is ethical labor actions, which ensure a fair internal system in relation to its stakeholders, who are the heart of the operation of its business; and finally, maintaining a successful corporate philanthropy, which strengthens human relations and creates awareness of respect and quality in the organizations. The contribution of this research will allow future research to know the repercussions of corporate social responsibility practices and how these factors influence the creation of a competitive image valued by the market.

Keywords: Social responsibility, Labor environment, Social commitment, Corporate governance, Corporate social performance

1. Introduction

The definition presented by Grijalva and Fernandez (2020), mentions that corporate social responsibility as the grouping of thoughts and precepts that link ethical and legal principles that impact the agents participating in the organizational sphere; in the same way Mellado (2013) states that it consists of transparent practices before the community, workers and the environment.

Costa et al. (2017) argue that over time, companies acquire a welfare for building in their environment, expanding their business without negative impact on the political environment and that is why more and more companies join the social responsibility program. Nowadays, businesses are facing demanding consumers. Not only the product or service, also companies as a responsibility so that their activities do not damage their entire environment. Pacheco et al. (2012), state that the reputation of a company is related to social responsibility, this influences the increased awareness of consumers and the organization when making decisions of a purchase since, it starts with the needs of a product or brand. Ruiz et al (2015), mention that the social responsibility of Spanish companies is widely recognized in Europe, the status of Spanish companies in international standards of sustainable development reflects the country's efforts in the field of corporate social responsibility. Likewise, Capriotti et al. (2020), indicate that corporate social responsibility (CSR) can help Latin American companies to integrate into the social environment to satisfy and strengthen relationships to achieve greater recognition and appreciation by society.

Social responsibility is associated with large companies, but now social work is part of SME management. This trend has emerged because companies are realizing the benefits of doing so, due to the fact that it contributes to legitimacy, leadership and management (Vives and Vara, 2012; Huerta-Tantalean et al., 2022; Espinoza-Molina et al., 2022; Cordova-Buiza et al., 2022a; Barro-Chale et al., 2022). Bermudez et al. (2018), explain that responsible behavior that is a horizontal element of organizational management with ethical models of

operation and management that emphasize stakeholders such as the impact perceived by business activities and creating expectations, economic, social and environmental needs.

1.1 Corporate Social Responsibility Worldwide

According to Sapién et al. (2015), the first Mexican organization in the program called Coalition for Corporate Social Responsibility, has the structure that groups 19 associations with a significant work history in a category, its objective is to encourage companies to become and be seen as creators of value, of the common good and in the environment of social responsibility, encouraging the different organizations that work for the country and especially for the benefit of all involved. On the other hand, Valarezo et al. (2013), explain that communication companies use Corporate Social Responsibility (CSR) as a commitment to economic development, as well as to improving the quality of life for the society in which they live. Likewise, the author Costa (2022), points out the potential of the corporate social responsibility (CSR) paradigm and its impact on the competitiveness of companies in Latin America and the Caribbean (LAC).

Lara et al. (2020), state that consumers are changing their purchasing priorities; they have chosen the alternative that embraces society, the environment and the economy. In this sense, they mention that they used the strategies of shared value that creates investments in social elements and that increase the competitiveness of a company, thus creating a synergistic link between organizational success and strategic success to improve the company's internal relations. Likewise, Sierra (2020), explains the factors involved in the company in CSR are considered three main factors: 1) social obligations and law 2) objectives of social responsibility and benefit 3) anticipating social problems.

1.2 Influence of Organizational Culture on Corporate Social Responsibility

The practice of corporate social responsibility is based on a culture of differentiation, justice and community transparency, which includes concern for workers, suppliers, government and organizations linked to the company's organizational system. The author presents the example of Banzo Mexicano, which provides educational services to citizens as a measure of social responsibility involving students and teachers committed to improving the quality of education (Costa et al., 2017; Cordova-Buiza et al., 2022b).

According to Perez et al. (2016), corporate social responsibility should be the main pillar of the activities within the company in order to improve the environment and quality of life in society within the company, in Sucre, in recent years, employees have sought to improve their working conditions and better assignments as part of corporate social responsibility that can help most companies to take this into account and participate in the process of dismissal or relocation to another company.

Carreño et al. (2020), comment that, in Ecuador, social responsibility is considered an indispensable requirement to maintain a strategic position in the competitive business world. Likewise, participation in the social responsibility policy is only a normative option, which has become a basic requirement of managers for stakeholders; it includes again the control established by corporate management, thanks to the commitments assumed in the execution of its operation and its ethical principles with a democratic basis, directly supporting internal and external communities. The rules that were established in the ethical principles of civil law and legal regulations; the training of employees not only in matters related to work performance, but also in relation to personal, family and social improvement; ensure working conditions and human health, as well as taking into account ethical and decision-making possibilities (Carrera, 2013).

Not all organizations that face adversity can respond correctly to recover and become more competitive, which is why the question arises: ¿What are the factors that influence social responsibility in Latin American companies?

According to the great potential of the concept of social responsibility, the purpose of this study is to describe the factors that influence social responsibility in Latin American companies, derived from an analysis of the last 10 years is to explain how to help achieve a more efficient organization based on the systematic review of the work published in the most relevant period from 2012 to 2022.

The objective of the research is to show the factors that influence social responsibility in Latin American companies, in the scientific literature between 2012 and 2022; in order to determine how and how important is the application of these indicators; labor and environment, for the growth, image and sustainability within companies.

2. Methodology

The present research employs a method of information gathering known as empirical literature search, which consists of the search, collection and analysis of scientific articles in recognized databases according to the variable of study, in this case Social Responsibility. Likewise, Moreno et al. (2018), mention that the systematic review is a clear and structured summary of the available information designed to answer a question. Since they consist of multiple articles and sources of information that represent the highest level of evidence.

According to Aullón et al. (2015), the investigation of the materials found in the databases must be carried out in a methodical and exact way, since in this way, truthful and suitable information will be found. In the development, there is a diverse amount of databases which were: SCIELO, DIALNET, SCOPUS and REDALYC, being the most used REDALYC, since it has great accuracy of search filters such as categories of disciplines, countries, languages and years. Likewise, the information it contains is orderly, pedagogical, detailed and specific, thus obtaining a total of 28 articles.

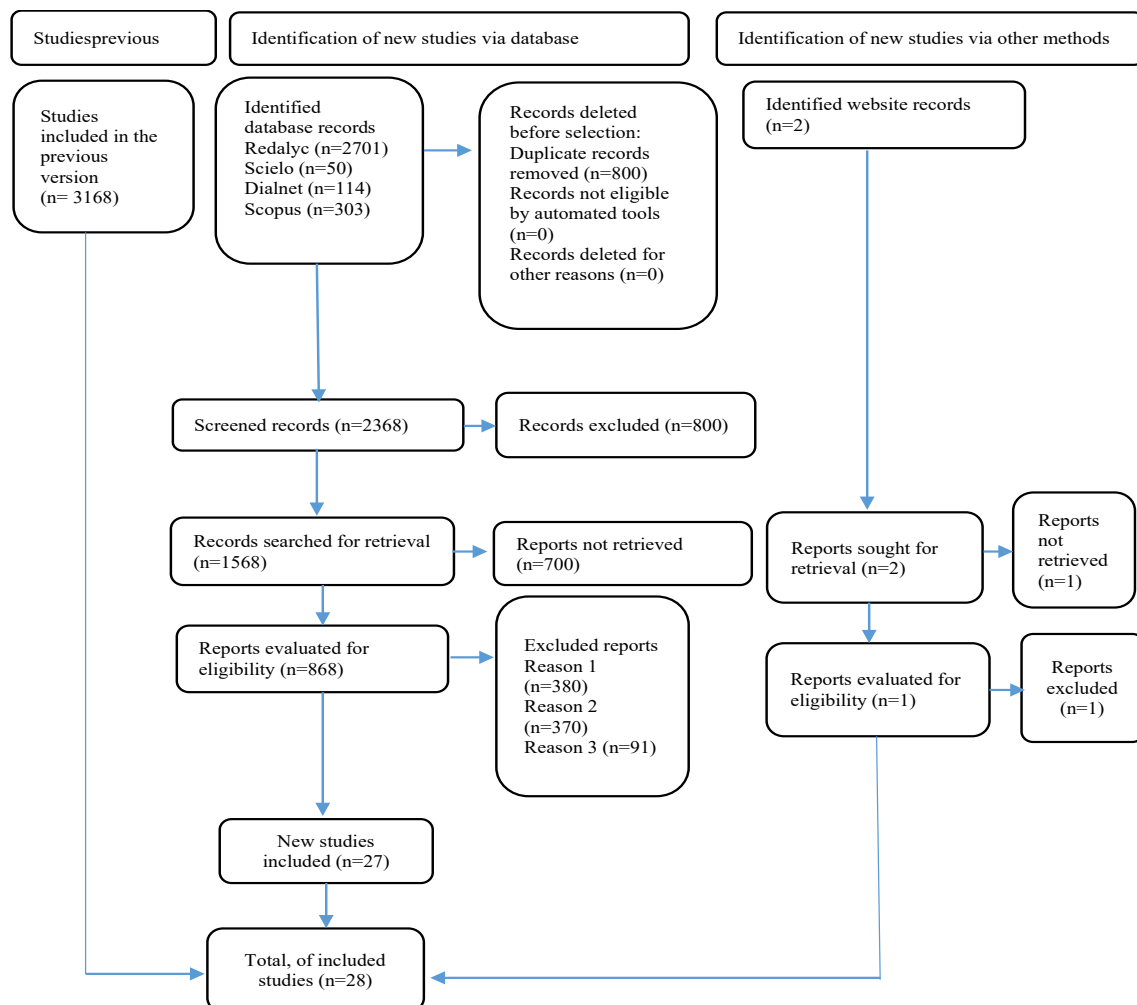


Figure 1: PRISMA 2020 - Analysis of this systematic review

Figure 1 shows in detail the search and selection procedure, consolidating 28 articles that meet the established standards, since they stipulated precise information related to the study variable, "social responsibility". Likewise, for the search we used keywords such as; "CSR" "LATIN AMERICA", "LATIN AMERICAN SOCIAL RESPONSIBILITY", and with the Boolean connectors used were "and" and "or" in the databases (Redalyc, Dialnet, Scopus and Scielo), to find, concise and accurate sources to our research, they also contained the heading of received and accepted, also the date within the established category.

3. Results and Discussion

3.1 Key Issues Identified in Articles Using ATLAS ti

From the diagram presented through the ATLAS ti software, it is intended to show which were the most important topics or words, according to the number of mentions by the authors, which were found in the 28 articles; as can be seen, 5 key topics are observed, which in the ATLAS ti program are considered as codes, from which a total of 15 key subtopics are derived, which in important fragments of each article have been mentioned and studied by the authors; the subtopics with the highest frequency were: sustainability reports, resource preservation, management transparency, corporate policies and finally ecological and social inequality.

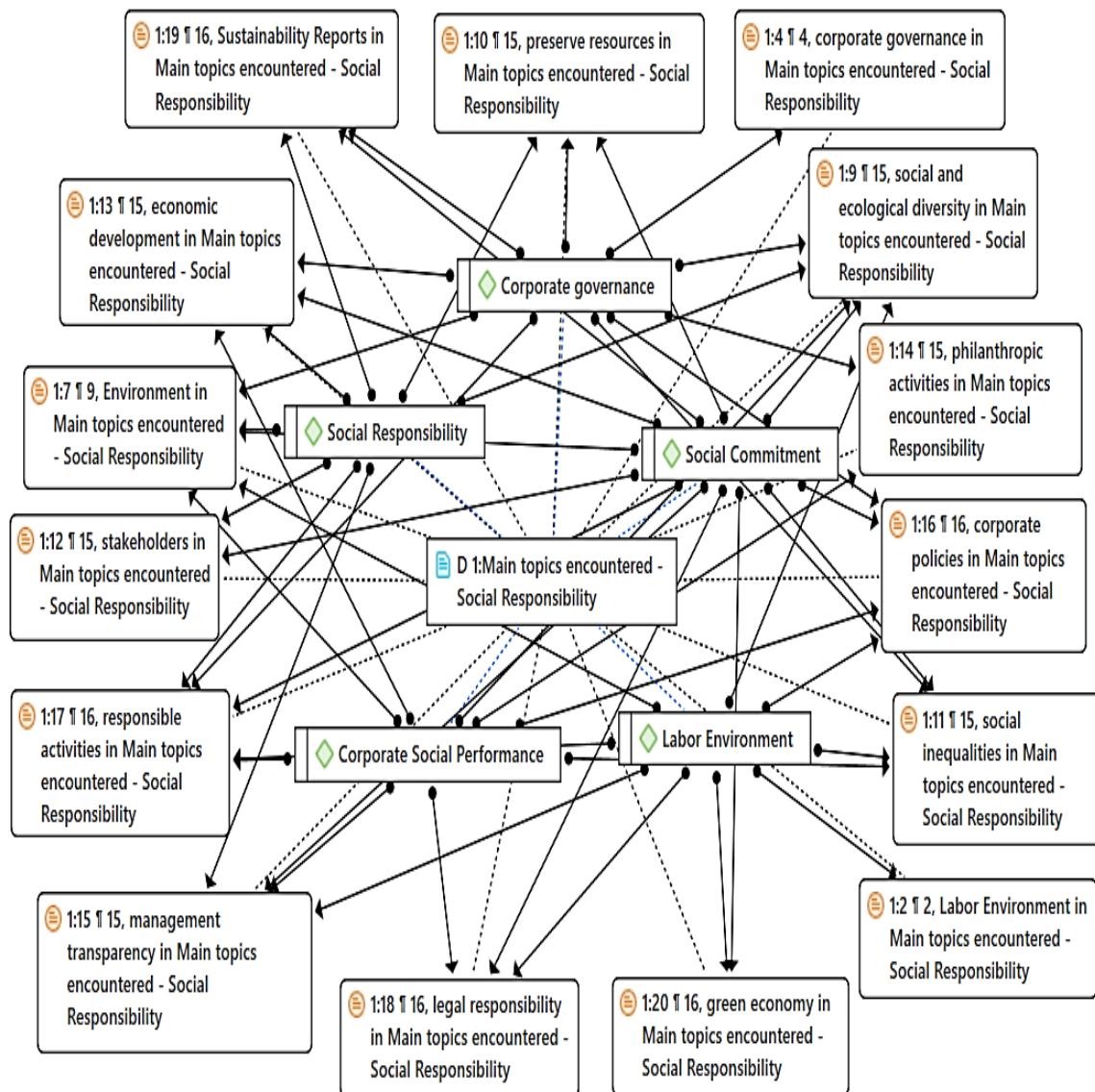


Figure 1: Flow chart of key topics – Atlas ti.

3.2 Descriptive Analysis of Articles

As can be seen in figure 3, during the last 10 years (2012-2022) there has been an increasing trend showing a research interest in social responsibility, thus the year that stands out the most is 2020 with 16% of articles found. In addition, the country of origin of the largest number of articles found is Mexico, where 24% of articles were obtained, in second place is Colombia with 20%, in third place are Venezuela, Ecuador and Argentina with 15%, and lastly, Bolivia and Chile with a total of 4% of sources obtained.

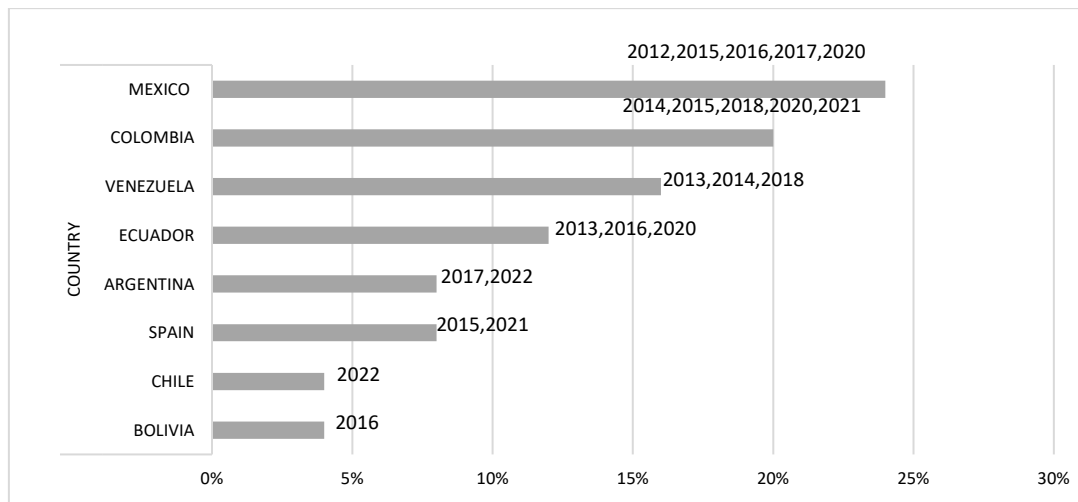


Figure 3: Year and Country of Origin of the Articles

Figure 4 shows that 52% of the commercial and productive sector is the most used for the study, followed by the service sector with 20%, then the health sector, the public sector, the extractive industry sector with 8%, and finally, the academic sector with a participation of 4% for research.

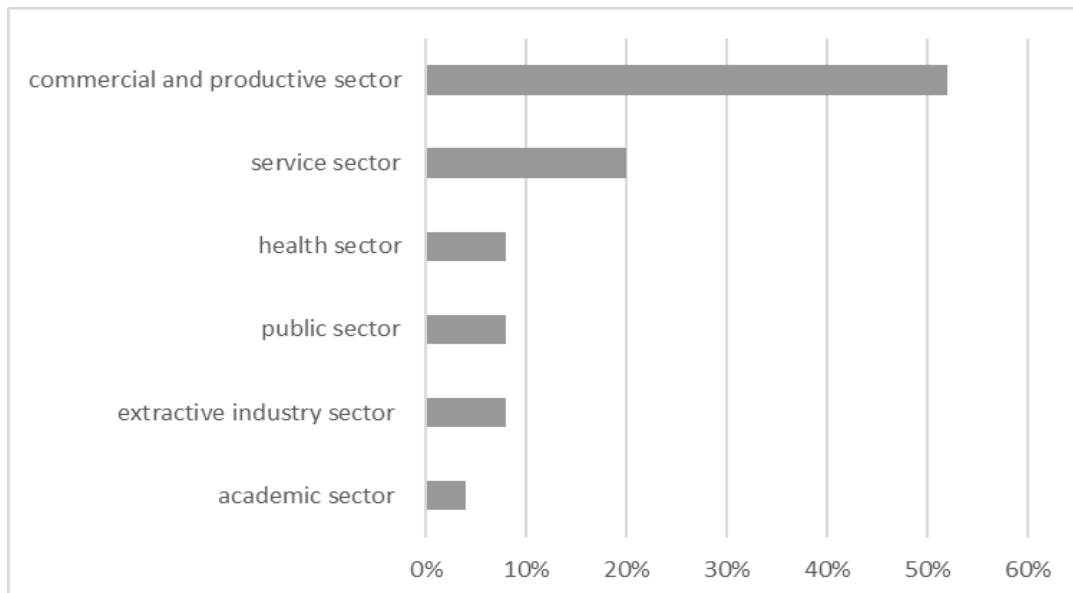


Figure 4: Year and Country of Origin of the Articles

Figure 5 shows a cross analysis of all the methodological tools used in the selected articles as well as the type of research; the results showed that there are mostly descriptive correlational studies, where a mixed research design (quantitative and qualitative) was used, applying tools such as interviews, questionnaires and documentary analysis; on the other hand, there are descriptive and exploratory studies with significant participation using quantitative and qualitative tools. Finally, correlational studies with mixed study designs were also found.

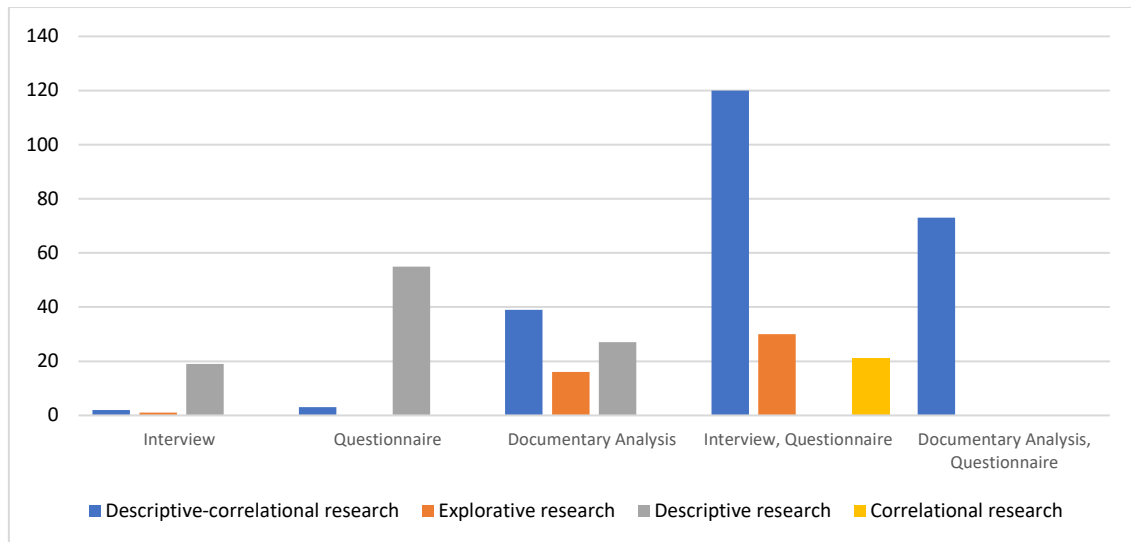


Figure 5: Types of studies and research tools

In the figure 6 presented, an analysis of the promoting entities with the highest affiliation of the 28 selected articles was made; it can be seen that the University of Guadalajara in Mexico manages to lead the top with 4 publications on the subject of social responsibility in Latin America; then follows the Autonomous University of Mexico with 2 publications; on the other hand, an additional graph of analysis is observed; where they are classified according to the type of entity, and with 86% occupy in its category the universities and with 14% independent research entities.

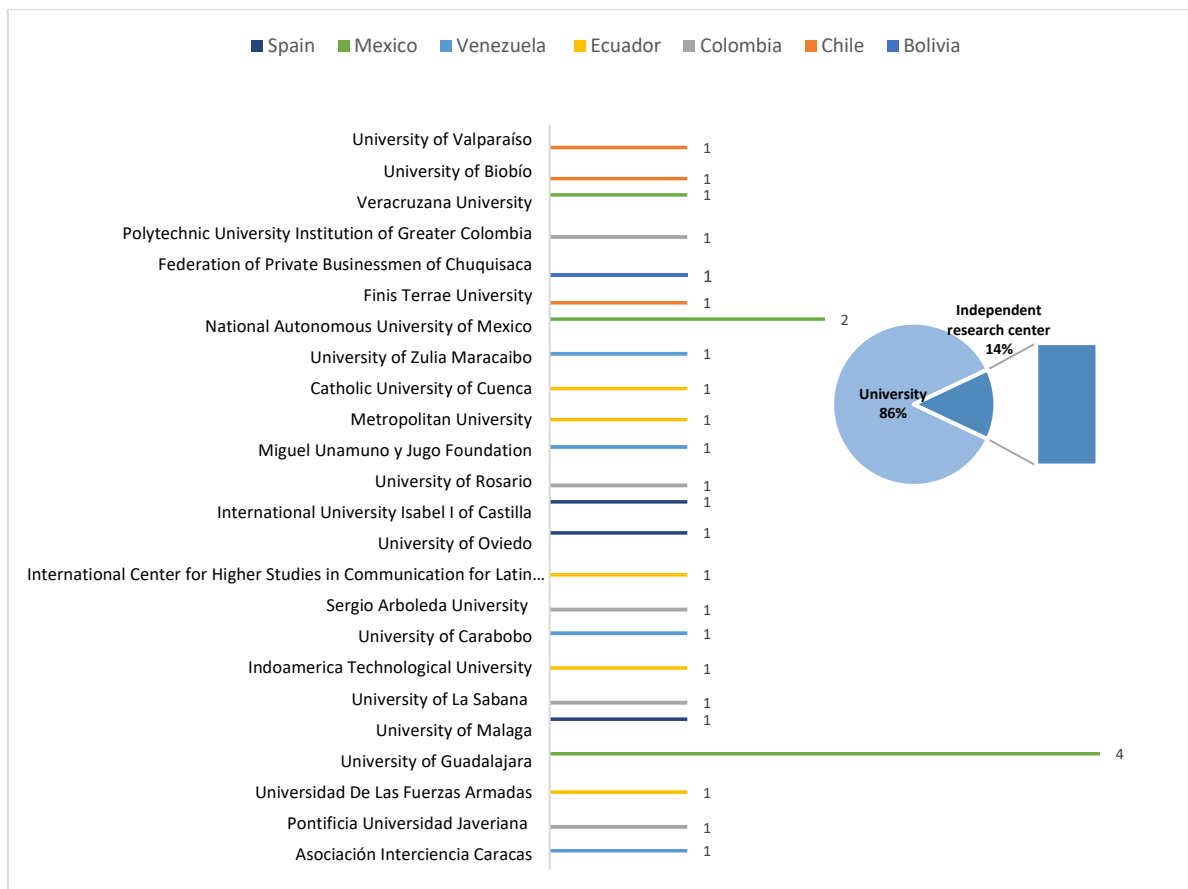


Figure 6: Affiliated entities/promoters by country

3.3 Overall Analysis of Articles

Through the analysis of each article, it was possible to consolidate information on dimensions that unfold from the central theme, several authors make repetitive mention of 3 dimensions in their empirical literature research that are directly related to corporate social responsibility.

In the first place, there is the work environment, since it is a business vision that prioritizes respect for people, ethical values, with the management of the company itself, regardless of the products or services offered by the company. Secondly, there is the social commitment, the main objective is to maximize the contribution to sustainable development and the welfare of society, this is a challenge, a moment of opportunity to reorient our production systems, it also means revitalizing their daily activities in terms of commitment to people. Finally, the environment is the set of cleaner production mechanisms implemented by public or private companies to minimize their environmental impact on productive activities in space, thus contributing to improve the quality of life of the inhabitants of the environment. The following is a comparison of the criteria of some authors on these issues.

Labor environment

A workplace is a space or environment where people perform various tasks. It is relevant to emphasize the importance of a person working in a good work environment because he/she performs a paid productive activity. Therefore, working conditions are related to the state of the work environment, where the organization must consider the aspect of balance between collaboration, privacy and most importantly the goal of safety (Carillo, 2017; Castillo et al., 2021; Molero, 2016; Mellado, 2013).

The work environment has a great impact on employee sentiment. If the company is characterized by a positive work environment that promotes employee commitment, friendship and organizational culture, it ensures the achievement of goals. Also, the management of the company has to face very complex challenges, the ability to move forward in this context, to develop responsibly and to cooperate with other social and economic actors to achieve changes in the economic system, today is called added value to the Company and competitive advantage. Because they are more attractive to customers, employees and investors. It can also become a strategic resource for the survival of public and private organizations and become a social good (Costa et al., 2017; Gonzáles, 2014).

Social responsibility promotes positive leadership and equal opportunities. Partners develop independently, thus reducing operating costs, strengthening the brand image in the market and gaining a greater sense of identity and belonging of the partners, making it a better company, not with a short-term vision, but long-term, and through the company's Commitment to employees and families and society in general, society or the environment in particular, to contribute to sustainable and sustainable development with the aim of improving the quality of life of people (Sapién and Gutiérrez, 2015 Carreño and Narváez, 2020; Camacho, 2015).

Environment

Corporate environmental responsibility is more than recycling or energy saving initiatives. Since the company is responsible for the environment, taking into account the ecological impact of the entire production and operation of the company. Any manager of an organization, regardless of its size and scope, can position itself in the approach of "best environmental practices or cleaner production", where the environment is considered an important element in its development. Some companies in Latin America, North America are already beginning to show a clear trend towards sustainability (in environmental terms) (Yucra, 2016; Grijalva and Fernández, 2020; Sánchez et al., 2012).

In the world of the 21st century will flourish those companies that outperform their competitors and pay special attention to all stakeholders, not only customers and employees, but also contribute to the improvement of their environment (Costa, 2022; Bermudez and Mejías, 2018). According to the authors Benavides et al. (2014), the so-called social responsibility in the environmental field is just a series of actions and efforts that a company makes to harmonize its business and corporate activities with the protection of the environment and its operating environment, this is because environmental issues have become one of the strategic priorities for many companies today. It is therefore necessary to raise awareness among those around you so that they are aware of the importance of small gestures and everyday behaviors that, although they naturally go unnoticed, can play an important role in the long term.

Social commitment

Aranibar et al. (2022), point out the benefits that generate a positive impact on employees' social commitment and job satisfaction. Likewise, organizational socialization becomes a keyword for job performance as it can be improved by introducing social benefits.

On the other hand, it is essential that companies explain and correctly channel the socially responsible philosophy that they promote, only in this way will they make future generations of all the agents that make up their stakeholders adopt commitments and conscious decisions, in this way, the principles of responsible management training in the company will create competencies that influence ethical behavior and decision making, so that they can respond to the new business requirements (Sierra, 2020; Pérez et al., 2016).

According to Molero (2016), in order to create a responsible social identity in the business environment, hierarchical instruction is of utmost importance; that is, the leaders of each company have the duty to impart principles and values within the policies practiced by their workers, it would not be possible to create a solid environment with responsible practices if the heads are not a reflection of the same.

Other studies mention that in order to forge a sustainable commitment in time, the same individual must forge, cultivate and have autonomous conviction of certain actions in favor of society and the environment, and this work links personal training; from this intrinsic characteristic in the collaborator, companies can work to create awareness and good practices in their work environment and in the corporate processes (Carrera, 2013; Moreno et al., 2018; Aranibar, 2022).

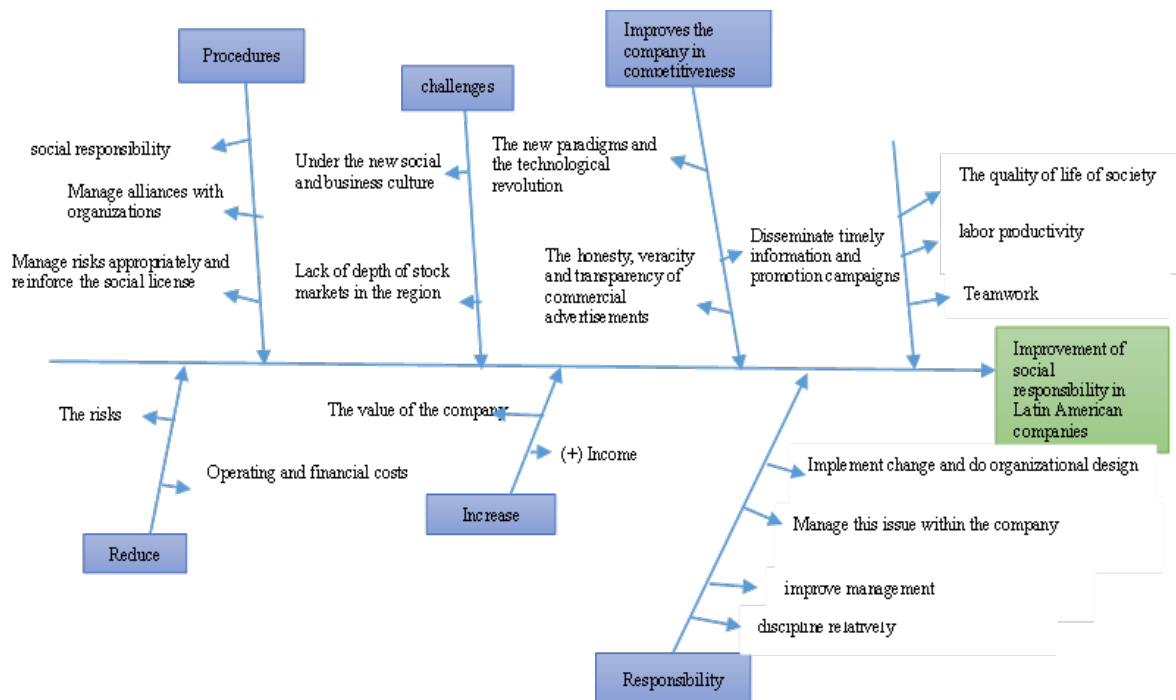


Figure 7: Ishikawa diagram - Effects of Corporate Social Responsibilities

Figure 7 shows the development of a systematized analysis of social responsibility improvements for the company's growth. It considers 7 important points. Firstly, managing responsibility by managing alliances with companies to avoid the risks that arise. Secondly, the challenges of the new social culture. Thirdly, improving competitiveness for the paradigms of new technologies through publicity and transparency. Fourth, promote quality of life, teamwork for good productivity. Fifth, reduce financial operating costs. Sixth, increase revenues and the value of the company. Last but not least is the responsibility to improve management by implementing change and discipline within the company.

4. Conclusions

The compilation of empirical literature based on concepts, methods and theoretical/critical implications; allows to be an adequate guide for new research regarding the study variable. The methodology most applied in the selected articles corresponds to the mixed (qualitative and quantitative) and quantitative design. According to what has been compiled, the great majority of the authors orient their studies to apply objective tools, such as

questionnaires to their subjects of study with the objective of giving depth to the analysis, obtaining precise and efficient results.

The obstacles we identified are firstly, the structure of the IMRD, since, at the time of the search for articles in the database, many of them did not comply with this structure. Secondly, several sources were not found in the geographic location established in the study variable. Finally, the range we established did not correspond to the last 10 years for the research.

The dimensions that influence corporate social responsibility are on the one hand, social commitment, since it encompasses a series of responsibilities that help to participate in social welfare. It also generates competitiveness in the business world. On the other hand, there is the labor area, where the importance of each of the workers with respect to the positions they occupy for a good working environment is highlighted. Finally, we have the environment, which is fundamental for improving the quality of life in society.

As part of the information consolidation process, an Ishikawa diagram is presented as a visual tool to express the effects of the application of social responsibility in companies, finding 7 important points developed in the scheme. The continuous improvement of social responsibility in Latin American companies is very important and necessary, since it seeks the sustainability and growth of the company, allowing the implementation of adequate and sustainable management philosophies, taking care of all stakeholders to increase their competitiveness.

References

- Aranibar M. and Baez Y. and Limon J. and Ortega M. and Hernández J. (2022) "Et Al, The Impact Of Social Benefits On Work Commitment And Organizational Socialization In The Manufacturing Industry", *Sustainability*, Vol 14, pp. 108-137.
- Aullón P. and Chico R. (2015) "The Empirical Science of Literature Concepts, Methods, Consequences, Journal Published by the Seminar on Theory of Literature and Comparative Literature of the University of Alicante", *Seminario de Teoría de la Literatura y Literatura Comparada*, Vol 1, pp. 11– 34.
- Barro-Chale, A., Rivera-Castañeda, P., Ramos-Cavero, M. J. and Cordova-Buiza, F. (2023) "Agricultural associations and fair trade in the Peruvian rainforest: A socioeconomic and ecological analysis", *Environmental Economics*, Vol 14, No. 1, pp. 24-35.
- Benavides N. and Cortés M. (2014) "Strategic Communication and Corporate Social Responsibility", *Scenarios and Potentialities in The Creation of Social Capital, Literature Journal*, Vol 5, No. 22, pp. 127-158.
- Bermudez Y. and Mejías A. (2018) "Measurement of Corporate Social Responsibility: Cases In Small Latin American Companies", *Industrial Engineering Journal*, Vol 11, No. 3, pp. 315-325.
- Camacho J. (2015) "The Norms of Social Responsibility. Its Dimension in the Labor Environment of Companies", *Latin American Journal of Social Law*, Vol 1, No. 20, pp. 3-29.
- Capriotti P. and Zeler I. (2020) "Communication of Corporate Social Responsibility of Latin American Companies on Facebook: Comparative Study with Global Companies", *Scientific Journals Of Latin America And The Caribbean, Spain And Portugal*. Vol 23, No. 2, pp. 3-29.
- Carreño M. and Alvarez J. and Narváez C. (2020) "Social Responsibility in Shrimp Companies", *Interdisciplinary Arbitrated Journal Koinonía*. Vol 5, No. 10, pp. 455-475.
- Carrera R. (2013) "Is Social Responsibility Considered a Function of the Latin American Central Bank?", *Electronic Scientific Journal of Human Sciences*, Vol 9, pp. 64-90.
- Carrillo A. (2017) "Social Responsibility in Latin American and Spanish SMEs: Limitations, Objectives and Strategies", *Journal of Scientific Dissemination of the Technological University Indoamerica*, Vol 6, No. 2, pp. 61-65.
- Castillo C. and Ripoll V. and Urquirdi A. (2021) "Dissemination of Corporate Social Responsibility in Latin America: Evidence in the Use of the GRI Guideline", *Lasallian Research Journal*, Vol 18, No.1, pp. 134-157.
- Cordova-Buiza, F., Huaranga-Castillo, F. and Trillo-Corales, C. (2021a) "Corporate social responsibility actions in agribusiness: Towards sustainable community development", Paper presented at the Proceedings of the 2021 IEEE Sciences and Humanities International Research Conference, SHIRCON 2021.
- Cordova-Buiza, F., Antaurco-Perez, J. J., Espinoza-Prieto, B. E. and Huerta-Tantalean, L. N. (2022b). "Benefits of CSR through quinoa biotrade in south american communities", Paper presented at the Proceedings of the European Conference on Innovation and Entrepreneurship, ECIE, Vol 17, No. 1, pp. 133-140.
- Costa M. and Bravo L. and Borin E. and Filho J. (2017) "Corporate Social (IR) Responsibility in Brazil: Companies, Power & Ties Intertwined", *Developments in Corporate Governance and Responsibility*, Vol. 11, pp. 297- 315.
- Costa C. (2022) "Corporate Social Responsibility and Its Role for The Competitiveness of Latin American Companies", *Journal of The Faculty Of Economic Sciences*, Vol 18, No. 11, pp. 239-256.
- González L. (2014) "Revealing the Guidelines on Social Responsibility in the Good Governance Codes of the Listed Companies in Colombia", *Mercado y Negocios Journal*, Vol 15, No. 38, pp. 599-624.
- Espinoza-Molina, J., Paucar-Cáceres, A., Silva-Cornejo, M. D. C., Quispe-Prieto, S., Acosta-Caipa, K., Chambe-Vega, E., . . . Huerta-Tantalean, L. N. (2022). Enabling risk management and adaptation to climate change through a network of peruvian universities. *Sustainability (Switzerland)*, Vol 14, No. 24.

- Goris S. (2015) "Utility and Types of Literature Review". Jan Santa Cruz De La Palma, Vol. 9, No. 2, pp. 1-10.
- Grijalva B. and Fernández A. (2020) "Corporate Social Responsibility and Competitiveness in Private Health Clinics in Quito, Ecuador", *Scientific Journals of Latin America, the Caribbean: Spain and Portugal*, Vol 8, No. 2, pp. 315- 328.
- Huerta-Tantalean, L. N., Quispe-Prieto, S. C. and Cordova-Buiza, F. (2022) "Strategies to fight hunger and malnutrition in Latin America. [Estrategias de lucha contra el hambre y la desnutrición en Latinoamérica]", *Gaceta Sanitaria*, Vol 36, No. 3, pp291.
- Mellado C. (2013) "Corporate Social Responsibility in Small and Medium Enterprises", *Revista En Ciencias Sociales*, Vol 15, No. 1, pp. 24-33.
- Molero G. (2016) "Corporate Social Responsibility, In the Context of Social Capital", *Journal Of Scientific Information*, Vol 22, No. 3, pp. 46-59.
- Moreno B. and Muñoz M. and Cuellar J. and Domancic S. and Villanueva J. (2018), "Systematic Reviews: definition and basic notions", *Revista clínica. Periodoncia Implantol*, Vol 11, No 3, pp.184-186.
- Mansilla K. and Guinez N. and Jeldes F. (2022) "When the Community is Invisible: Corporate Social Responsibility in the Mining Industry", *Latin American Journal of Socio-Environmental Studies*, No.31, pp. 77-94.
- Lara L. and Sanchez J. (2021) "Corporate Social Responsibility for the Competitiveness of Organizations in Mexico", *Mercados y Negocios*, Vol 22, No. 43, pp. 97-108.
- Pacheco C. and Meza F. (2012) "Imagen de responsabilidad social: factores competitivos que influyen en el comportamiento del consumidor", *Mercados y Negocios*, Vol 13, No. 3, pp. 125-146
- Pérez M. and Espinoza C. and Peralta B. (2016) "Corporate Social Responsibility and its Environmental Approach: A Sustainable Vision for the Future", *University and Society Journal*, Vol 8 No 3, pp. 110-121.
- Rodríguez C. (2014) "University Social Responsibility. Its management from the perspective of directors and teachers", *Management Review*, Vol 39, No 6, pp. 220-230.
- Ruiz I. and Castillo A. (2015) "Social Responsibility of Companies in Spain", *Revista de Ciencias Sociales*, Vol 1, No. 14, pp .302-335.
- Sanchez E. and González M. and González I. (2012) "Evaluation of The Factors Influencing the Perception Of Employees Regarding The Situation Of Social Responsibility Of A Manufacturing Company", *Mercado y Negocios Journal*, Vol 9 No 24, pp. 85-106.
- Sapién A., Piñon L. and Guitierrez M. (2015) "Corporate Social Responsibility in Chihuahuan Companies That Obtained The ESR Distinction 20131", *Revista de Ciencias Sociales y Humanas*, Vol 16, No. 30, pp. 223-231.
- Sierra S. (2020) "The Role of Corporate Social Responsibility in the Labor Inclusion Model for Victims and Demobilized Persons of the Colombian Armed Conflict", *Universidad y Empresa*, Vol 23, No.40, pp. 1-23.
- Valarezo K. and Gutiérrez I. (2013) "Corporate Social Responsibility in Communication Companies in Latin America", *Revista Latinoamericana de Comunicación*, No. 122, pp. 46-52.
- Vives A. and Vara E. (2012) "Corporate Social Responsibility in Latin America", *Journal of the Inter-American Development Bank*, p. 235-343.
- Yucra E. (2016) "Analysis of Outplacement and Corporate Social Responsibility in the City of Sucre - Bolivia", *Research and Business Journal*, Vol 9 No. 14, pp. 60-69.

Mapping Knowledge Needs of Hospital Estates and Facilities Management Teams: Insights from a Delphi Study

Carl-Magnus von Behr, Tim Minshall and John Clarkson

Department of Engineering, University of Cambridge, UK

cmv30@cam.ac.uk

Abstract: The role of Estates and Facilities Management (EFM) in the healthcare sector is often overlooked despite its crucial contribution to the efficient delivery of clinical services. This paper explores the knowledge needs of EFM professionals at different job levels within the National Health Service (NHS) in the UK. Using a modified Delphi-technique approach, we collected data from three rounds of online questionnaires with a total of 152 EFM professionals. With the use of content analysis and descriptive statistics, we identify the most commonly reported knowledge needs across different organisational levels. Hierarchical clustering heatmaps visualise these varying knowledge needs of different job roles and their priority levels, allowing for easy identification of target areas for professional development. We identify four key categories of knowledge areas, illustrating evolving needs as professionals progress in their careers. Within these areas, four trends emerged across various hierarchical levels. Firstly, a reliance on external Authorising Engineers (AEs) for *Technical Expertise & Experience*, *Benchmarking & New Technologies*, and *Professional Development* was evident, raising concerns about aligning organisational expectations with top management expertise. Secondly, the skills required for the sustainability and digitalisation agenda lack emphasis, highlighting a crucial gap between organisational strategy and practical focus. *Collaborative Proficiency* surfaced as important for Managers and Heads of EFM, underscoring the importance of interdisciplinary collaboration. However, at the Director of EFM level, there is a lower emphasis on networking and collaboration, which is in contrast to the current restructuring of the NHS towards Integrated Care Systems. Furthermore, the Directors of EFM have a strong focus on *Financial Management* skills, possibly influenced by the prevalent Board reporting structures. This focus, paired with the lack of focus on *Technical Expertise & Experience* and *Benchmarking & New Technologies* could influence the ability to secure funding for cutting-edge technologies while posing a large financial risk of relying on legacy systems. These findings underscore the need for targeted training programmes addressing these disparities and emphasise the importance of aligning organisational structures with evolving knowledge needs for effective healthcare EFM management. The research contributes to the understanding of knowledge management in organisational hierarchies and offers a framework applicable to other sectors and organisations. To enhance understanding, future studies could delve deeper into the identified trends, aiming to uncover the underlying causes and intricacies shaping the identified patterns.

Keywords: Estates and facilities management, Knowledge needs, Delphi study, Organisational hierarchy

1. Introduction

The healthcare sector operates under tight budgets and faces significant structural challenges, including workforce shortages, funding pressures, and service reconfigurations (House of Commons, 2021). While the majority of attention is typically devoted to clinical services, the crucial role of Estates and Facilities Management (EFM) in enabling the delivery of these services is often overlooked. EFM, comprising people, processes, and physical spaces (Alexander, 1996), must be effectively orchestrated to ensure the efficient utilisation of the built estate and enable clinical staff to deliver the highest possible level of clinical services.

In the context of the UK's National Health Service (NHS), EFM is responsible for 1,200 directly managed hospitals and 3,000 treatment facilities (NHS England, 2023) with a workforce of 100,000 staff (NHS, 2022). Alongside an annual cost of £11.1 billion, the NHS faces the challenge of a £10.2 billion backlog maintenance expense, all while pursuing the ambitious goal of achieving net zero carbon emissions by 2040 (NHS Digital, 2022). Addressing these challenges necessitates leveraging the collective capabilities and skills of the NHS workforce through enhanced collaboration and integration of fragmented services. However, there are several troubling aspects within the NHS EFM workforce, such as an ageing workforce (with 34% of EFM staff over 55 years), a high staff sickness absence rate, and a diagnosed skills gap (NHS, 2022). In light of these challenges, enhanced collaboration is proposed as a cornerstone of the new way of working. However, achieving effective collaboration depends on various factors, including the social, organisational, and cultural environment, and requires careful orchestration to foster widespread adoption within the organisation.

In this context, understanding the specific knowledge needs of EFM professionals at different organisational levels is imperative. Despite the recognised importance of this knowledge, there is a gap in the literature regarding the precise types of knowledge that are essential for EFM staff across various job roles within the NHS. This knowledge gap poses a significant challenge to effective workforce development and knowledge management strategies within the EFM profession, hindering its ability to formulate targeted training

programmes and KS mechanisms necessary for enhancing organisational performance and fostering effective career pathways. To address the gap in the understanding of the knowledge needs of EFM professionals at varying hierarchical levels, this study aims to identify and analyse the specific knowledge areas crucial for staff at different levels within the EFM organisational hierarchy.

The paper is structured as follows. Firstly, we summarise the existing literature on EFM, KS and knowledge types. Then, we review the methods that were used to collect, analyse, and present data for the research. Finally, we present and discuss the collected data and conclude by outlining academic and practical contributions, acknowledging the limitations of this study and highlighting further research opportunities.

2. Literature review

2.1 Estates and Facilities Management

Facilities Management (FM) involves integrating multi-disciplinary activities within the built environment and managing their impact on people and the workplace, as described by Alexander (Alexander, 1996). FM departments ensure that buildings, systems, and services support the core operations and strategic objectives of organisations, even in changing conditions. It encompasses both strategic and operational considerations and can be categorised into hard and soft FM. Hard FM focuses on the operation and maintenance of the built environment and utility infrastructure, while soft FM involves support services for an organisation's core functions, such as security or catering (Pitt and Tucker, 2008). The recent ISO 41011:2017 definition of FM emphasises its role in integrating people, places, and processes within the built environment to enhance the quality of life and productivity of individuals and the core business (Bröchner et al., 2019). This definition provides a foundation for understanding the evolving nature of FM and highlights the growing importance of creating workspaces that align with organisational objectives while promoting well-being and productivity.

In the NHS, FM is commonly referred to as Estates and Facilities Management (EFM) which reflects the comprehensive nature of the management practices employed within the healthcare setting. NHS Estates (1996) defined EFM as the practice of coordinating the physical workplace with the people and work of the organisation, integrating principles from business administration, architecture, and behavioural and engineering sciences (Keraminiyage et al., 2004). Nutt (2000) outlined four strategic directions for FM, emphasising the central resources of financial, human, physical, and information resources. The evolution of FM literature has seen a progression from (i) solely focussing on cost minimisation to (ii) integrating FM activities within organisations, (iii) focusing on resource management and supply chain processes, and (iv) ultimately emphasising alignment between organisational structure, work processes, and the built environment (Baaki et al., 2016). However, studies have highlighted the lack of KS among EFM teams in NHS Trusts, requiring improved communication and knowledge utilisation (Barlow et al., 2009; Pathirage et al., 2008). Recently, the lack of shared ownership and knowledge among multi-disciplinary teams has been identified as a barrier to effectively addressing patient safety concerns during the COVID-19 pandemic (HSIB, 2021). Overall, the FM literature emphasises the importance of strategic alignment, integration of knowledge and resources, and effective communication practices for optimising EFM operations in healthcare settings.

As visible in **Figure 1**, EFM can be broadly divided into three different management levels: (i) Directors of EFM on the strategic level, overseeing long-term planning and organisational vision, (ii) Heads of EFM and Managers on the tactical level, responsible for translating strategies into actionable plans, and (iii) Technicians on the operational management level, focused on the hands-on execution of daily tasks.



Figure 1: STO framework illustrating management levels (adapted from Anthony, 1965)

Each of these organisational levels has distinct responsibilities, and therefore, varying knowledge needs. Ensuring accurate and coordinated information flow among them is essential for effective planning, decision-making, and operational activities (Haugen and Klungseth, 2017).

2.2 Knowledge Sharing

Knowledge Management (KM) is a widely researched field in management literature that treats knowledge as a valuable resource and an opportunity to drive competitive advantage. Davenport and Prusak (1998) define knowledge as a fluid mix of framed experience, values, contextual information, and expert insight that becomes embedded in organisational routines, processes, practices, and norms. Knowledge and information are often used interchangeably, however, while information merely consists of textual or numerical data presented in different forms of media, knowledge encompasses the interpretation and application of such information within a specific context (Love et al., 2011). Research suggests that KM leads to improvements in various areas, including workforce satisfaction, efficiency, customer satisfaction, cost, and other intangible benefits (Alavi and Leidner, 2001; Al-Busaidi, 2014).

KM approaches can be categorised into the information technology perspective (often referred to as knowledge transfer) which focuses on explicit knowledge and IT tools for codification strategies, and the human resource perspective – or knowledge sharing (KS) – which emphasises tacit knowledge and personalised strategies. However, a purely IT-based approach is considered less successful as it overlooks the crucial human element in KS. The process perspective of knowledge, which considers the human element and experiences, emerges as more relevant for managing knowledge within the FM context (Pathirage et al., 2008). In the healthcare context, individual NHS hospitals require the capabilities to access and apply knowledge from other hospitals to solve tasks more effectively, efficiently, and economically (Holdt Christensen, 2007). However, when creating new knowledge sharing channels, understanding three essential elements significantly impacts the dynamics and success: (i) the type of knowledge shared, (ii) the member connection and identity, and (iii) the integration of KS with daily work (McDermott, 1999). Davenport (1998) echoed this, stressing the importance of carefully considering each significant type of information and process in the organisation. Therefore, to determine the most suitable KS system for NHS EFM, it is essential to (i) identify the intended recipient based on task similarity and context, (ii) understand the nature of the task in terms of its routine and frequency, and (iii) recognise the type of knowledge being transferred (Dixon, 2000).

2.3 Knowledge Types in FM

Compared to many other built environment professions, in the FM literature, there is a lack of defined knowledge areas “required to structure a unified body of knowledge” (Hauptfleisch and Verster, 2011, p. 15). In this regard, Awang et al. (2014) reviewed the academic literature and various guides from professional bodies and FM associations, providing a summary of the core areas of knowledge for FM professionals in higher education systems. These encompass eight core competencies: (i) leadership and management, (ii) managing people, (iii) understanding the business organisation, (iv) operation and maintenance, (v) managing premises, (vi) managing services, (vii) managing resources, and (viii) managing the working environment (Awang et al., 2014).

However, these areas of FM knowledge are not directly transferable to hospital EFM, as the impact on patient care and safety requires a higher level of regulation. Therefore, we supplemented the eight areas of knowledge by reviewing hospital EFM guidelines published by professional bodies and the UK NHS. We compared Awang et al.’s (2014) review with general FM guidelines (IFMA, 2020), the Estate management competency framework (Department for Education (DoE), 2023) and specific guidelines for NHS EFM staff including (IHEEM and HefmA, 2021; NHS, 2023; NHS Employers, 2023).

While previous analyses did not provide a granular view of the varying knowledge priorities across organisational levels within EFM, we also reviewed the “Essential skills and competencies” of four job descriptions – spanning from operational to strategic level – which are listed in the Career Route Map developed for NHS EFM professionals (IHEEM and HefmA, 2021). To judge the required proficiency of certain knowledge areas across the managerial levels, we looked closely at the wording within the job descriptions and captured the levels of required proficiency using the Harvey balls, as visible in **Table 1**. From the analysis, we can observe three distinct patterns of priority for the knowledge areas. At the core of EFM competence lie foundational, cross-functional knowledge areas that possess universal relevance across all organisational levels. As EFM professionals progress up the organisational ladder, certain knowledge areas gain prominence specifically at the tactical and strategic levels. These progressive knowledge areas encompass specialised

domains such as Financial Management, which become pivotal for decision-making and strategic implementation. Conversely, there are knowledge areas that are more critical in day-to-day operational tasks and become less important as one advances within the organisational hierarchy. Of the 15 identified knowledge areas in the review of the literature, only *Environmental & Sustainability Awareness* is not mentioned in any of the job descriptions of the NHS Career Route Map.

Table 1: Knowledge areas mapped to organisational levels (grouped by patterns across organisational levels)

Organisational Level	Knowledge Area (ranking from ☺ = basic, ☹ = proficient, ☾ = experienced, ☿ = excellent)	Technician/ Tradesperson	Estates Manager	Head of EFM	Director of EFM
Cross- Functional	Communication Skills	☾	☿	☿	☿
	Collaborative Proficiency	☾	☿	☿	☿
	Legal & Regulatory Knowledge	☹	☾	☿	☾
	Organisational Skills	☾	☿	☿	☿
	Technical Expertise & Experience	☹	☿	☿	☿
	Problem-Solving	☺	☿	☿	☿
Tactical/ Strategic	Strategic Management & Planning		☿	☿	☿
	Benchmarking & New Technologies			☹	☹
	Financial Management			☹	☿
	Leadership & Team Management			☿	☿
	Human Resource Management				☿
	Resilience & Risk Management				☾
Operational	Data & Information Management	☹	☿		
	Professional Development		☹		
?	Environmental & Sustainability Awareness				

2.4 Research gap and Question

NHS EFM teams are facing significant challenges such as workforce shortages, budget constraints, and environmental sustainability goals. To address these challenges, EFM professionals require knowledge in a diversity of domains. Effective intra-organisational KS processes need to be aligned to the type of knowledge to be shared (Dixon, 2000). Previous research highlights general FM competencies (Awang et al., 2014; Hauptfleisch and Verster, 2011), but their translation to the specific, life-critical, and regulated context of hospital EFM remains unexplored. The analysis of the job descriptions in **Table 1** suggests differing knowledge requirements for strategic, tactical, and operational hospital EFM staff. To study the actual knowledge requirements as perceived by EFM professionals, this study addresses the research question: *What specific types of knowledge are important for staff at different levels within the EFM organisational hierarchy?* By exploring this question, our study contributes essential insights vital for informed workforce development and knowledge management strategies within the hospital EFM profession.

3. Methodology

To identify the importance of knowledge areas to staff groups within NHS EFM, we employed a Delphi-technique approach. This consensus method enables us to effectively address complex problems by leveraging the collective opinions and judgments of individuals (Linstone and Turoff, 2002). Given the demanding schedules of EFM staff and the 24/7 operation of hospitals, the Delphi-technique proves to be a more suitable approach compared to in-person methods. To address the geographic dispersion of participants across various hospitals, we designed a modified Delphi-technique with three rounds of online questionnaires as visible in Figure 2. The study protocol was reviewed and approved by the University of Cambridge Department of Engineering Research Ethics Committee and the NHS Health Research Authority (REC: 22/HRA/1079).

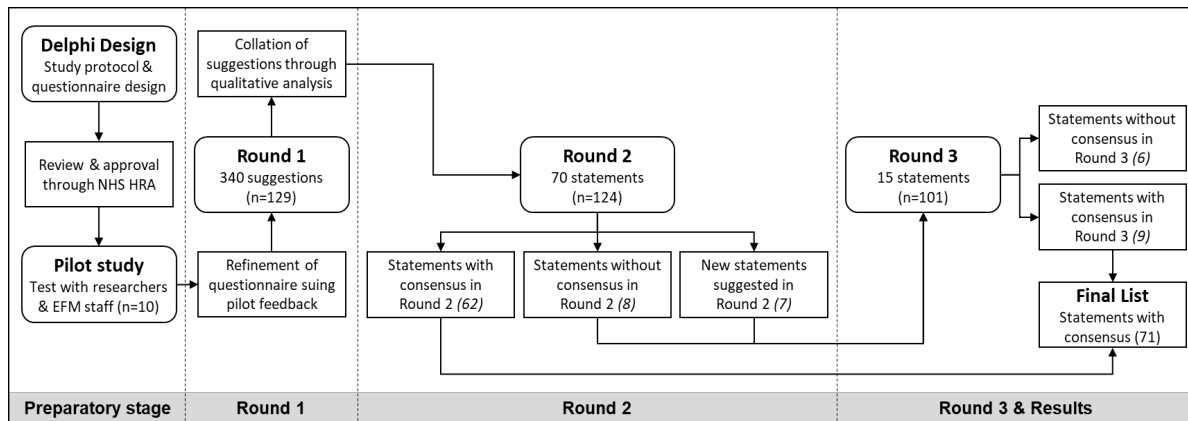


Figure 2: Flow chart of customised Delphi-technique across three rounds

3.1 Participants

Participants for the study were selected based on their professional roles, targeting NHS EFM staff by collaborating with NHS England, the Health Estates and Facilities Management Association (HEFMA), and the Institute of Healthcare Engineering and Estates Management (IHEEM). In total, 152 EFM professionals participated across three rounds. **Table 2** provides a breakdown of participant demographics and characteristics. In order to simplify the complex array of job roles and titles in the NHS, whilst still capturing the diversity of EFM job levels, participants were categorised into five sub-panels based on their NHS Band Level (BL) according to the Career Route Map designed by IHEEM and HEFMA (2021). To ensure accurate classification, participants were asked to select the sub-panel that best describes their current role in Round 3.

Table 2: Participant demographics in the Delphi study across three rounds

Category	Characteristics	R1 (n=129)	R2 (n=124)	R3 (n=101)
Gender	Male	78%	80%	78%
	Female	21%	19%	21%
	Non-binary	1%	1%	1%
Age	younger than 35 years	11%	7%	6%
	35-44 years	14%	12%	10%
	45-54 years	29%	35%	33%
	55 years and older	47%	45%	51%
Job level	Technician (BL2-6)	26%	21%	14%
	Manager (BL7-8a-b)	36%	31%	35%
	Head of Estates (BL8c-d)	10%	12%	11%
	Director of Estates (BL8d-9)	20%	27%	27%
	Authorising Engineer	9%	9%	14%
Trust Type	Acute Trust	51%	51%	45%
	Authorising Engineer	10%	10%	12%
	Combined Trust	9%	11%	12%
	Community Health Trust	12%	7%	10%
	Mental Health Trust	10%	11%	12%
	Contractors	5%	6%	7%
	Other (incl. ICS, CCG)	3%	4%	3%

3.2 Study Procedure

As visible in Figure 2, the study encompassed three rounds of questionnaires conducted using the online survey software Qualtrics. In Round 1, 129 participants participated and were asked to suggest relevant knowledge types to their work, resulting in 340 suggestions. These were qualitatively coded and consolidated into 70 statements. In Round 2, the responses from Round 1 were presented to 124 participants, who ranked the different statements on a Likert scale ranging from 1 (not at all important) to 5 (extremely important). Given the relative heterogeneity of the participants, consensus was determined using a bespoke grading system informed by Haywood et al. (2021) and Stubbs et al. (2022). The three levels of consensus included overall consensus (median >3.5 and interquartile range (IQR) ≤ 1 across all participants), partial consensus (median >3.5 and IQR ≤ 1 among at least one sub-panel), and no consensus (no panel with median >3.5 and

IQR ≤ 1). Following this grading system, 61 statements achieved consensus in Round 2, while the remaining 8 statements without consensus, alongside 7 new statements suggested by participants in Round 2, were carried forward to Round 3. In Round 3, participants received a questionnaire containing descriptive statistical outcomes from Round 2 and were given the opportunity to reassess their opinions in light of the perspectives of the different sub-panels. The ranking and consensus procedures in Round 3 followed the same approach as Round 2. 101 participants voted on the 15 remaining statements, of which 12 statements achieved consensus. The Delphi process was concluded after three rounds.

3.3 Data Analysis

For this study, we considered 69 statements that reached at least partial consensus among the Trust-internal staff in Rounds 2 and 3. Due to the scope limitations of this study, we aggregated the individual knowledge statements into the knowledge areas synthesised in Table 1. The analysis focuses on the variations and commonalities in knowledge areas among the five sub-panels: Technicians, Managers, Heads of EFM, Directors of EFM, and Authorising Engineers (AE). Along median and IQR, we calculated the percentage agreement to enable a visual analysis of the descriptive data. The percentage agreement represents the proportion of participants within the sub-panel who rated statements as “very important” or “extremely important”. To aggregate the data into knowledge areas, we averaged the individual statements in each knowledge area. After that, heatmaps for the importance of the knowledge areas across the five Delphi sub-panels were created using the “Pheatmap” library in the R software (Kolde, 2019), as visible in Figure 3. The heatmaps provide a visual representation of the average percentage agreements of the different knowledge areas, utilising a colour gradient (red/amber/green) to facilitate the exploration of patterns and relationships. The heat map clusters rows (knowledge areas) by similarity – using the Euclidean distance (square root of the sum of squares of the differences between rows).

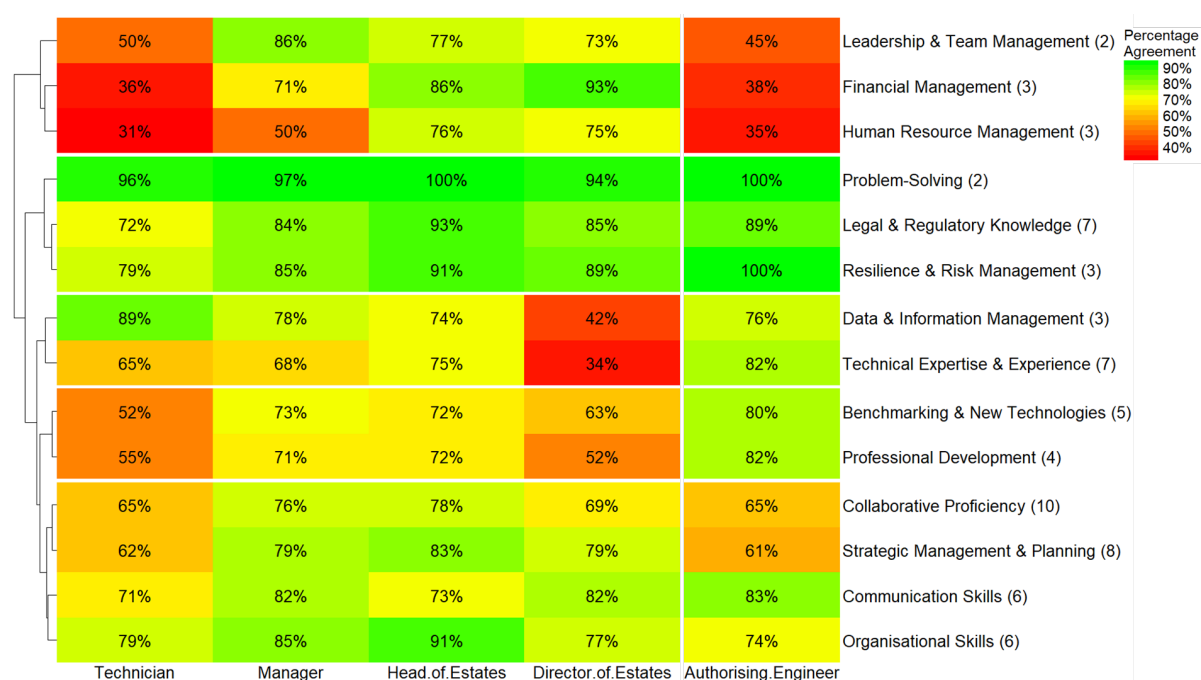


Figure 3: Hierarchical clustering heatmap showing the importance of 14 knowledge areas to five sub-panels

4. Findings and Discussion

This section examines how knowledge priorities change as EFM professionals progress through different job levels. We identify five overarching categories: (i) cross-functional, (ii) operational, (iii) tactical/strategic, and (iv) expert knowledge areas. To enrich the quantitative data and underline the observed trends, we use qualitative comments from participants.

Firstly, five knowledge areas emerge as pivotal across all organisational levels, called foundational knowledge areas – these include *Communication Skills*, *Legal & Regulatory Knowledge*, *Organisational Skills*, *Problem-Solving*, and *Resilience & Risk Management*. Across all organisational levels, the majority of participants (>70%) rated knowledge statements within these knowledge areas as very or extremely important to their day-to-day

activities. Within these knowledge areas, there are a couple of knowledge types that are less important on the operational levels. For example, less than half of the Technicians rated *Negotiation skills (Communication Skills)* as important for their work. This shows that despite the importance of communication skills for all EFM staff, there is a need for continuous learning for advanced skills which should be emphasised in training programmes, especially as individuals progress to higher seniority levels. *Communication Skills* “should be a core skill of any in-house estates manager [but are] not something taught on surveying/ estates-related courses” (Director of EFM).

Secondly, we identified five progressive knowledge areas that increase in importance as EFM professionals advance within the organisational hierarchy. Interestingly, four of those – namely *Strategic Management & Planning*, *Leadership & Team Management*, *Human Resource Management*, and *Collaborative Proficiency* – only increase in importance from the operational to a tactical level, but then drop off in the transition to the strategic level. *Leadership & Team Management* are most important at the Manager level and then decrease from Manager to Director of EFM level. A possible explanation for this could be that Managers have more day-to-day supervisory responsibility for Technicians compared to Heads of EFM. However, a Manager reported that they do not necessarily feel appropriately prepared for these responsibilities, stating “I often need to lead without being a line manager [...]. That is an area some people struggle with [and which] needs better understanding.” In contrast, *Human Resource Management* is most important at the Director and Head of EFM level, as they hold responsibilities for staffing budgets while only moderate proportions of Technicians and Managers perceive HR-related knowledge as relevant to their jobs. While some Managers feel that “it is beneficial to know [about HR planning], but it can be supported by [HR] specialists”, comments from a Head of EFM reveal a different perspective: “We [do HR planning] ourselves without HR involvement.”

Collaborative Proficiency stands out as a vital knowledge area for both Managers and Heads of EFM, reflecting the significance of inter-disciplinary and inter-organisational collaboration. A Head of EFM reflected that “to plan any strategy we need to link with colleagues in other fields not just restricted to ICT, Finance and HR but clinical colleagues, too.” Despite this importance, another Head of EFM emphasised that they often feel that collaboration is “more important to me than perhaps the team.” Managers, however, expressed challenges since there is “often limited time to network with [peers] and share learning.” This discrepancy becomes more striking at the Director of EFM level, where surprisingly, there is reduced emphasis on collaboration, despite the NHS's push for strategic alignment among regional Trusts through the Integrated Care System (ICS). Interestingly, *Strategic Management & Planning* does not have the highest perceived importance at the Director of EFM level but at the tactical level which was elaborated by a Head of EFM highlighting that “some top management wouldn't know how to write [reports], so it's easy to push responsibility to lower grade staff.” The fifth among the progressive knowledge areas – *Financial Management* – is the only one that is perceived as most important at the Director of EFM level. For example, all Directors of EFM considered *Constrained budget management* as very or extremely important.

Thirdly, there is one regressive knowledge area which has the highest importance at the operational level. As Technicians progress to Manager roles, *Data & Information Management* becomes less relevant due to less responsibility for manual data recording and organisation. In the NHS Long Term Plan published in 2019, the NHS puts a strong emphasis on technology and digital transformation, stating that “people, data and technology are crucial to the ongoing evolution of our NHS.” (NHS, 2019). To fulfil this vision, digital skills at higher organisational levels are imperative to leverage technology and data for the advancement of healthcare services.

Fourthly, *Professional Development*, *Technical Expertise & Experience*, and *Benchmarking & New Technologies* have the highest importance to AEs. This is partly reflected in the role description where the AE is described as the “independent professional adviser to the healthcare organisation” (Department of Health, 2014, p. 9). This was underlined by a Director of EFM stating: “Most Directors will have one specialist knowledge from the route they developed through [but they] cannot have operational knowledge of all services.” Therefore, Directors of EFM heavily rely on support from AEs. The time constraints faced by top management staff could be an explanation for the shifting focus: “I have done [training] in the past, but [have] less time to do so at my level” (Head of EFM). However, the data suggests a strong reliance on the *Technical Expertise & Experience* of AEs even though these are technically only required to “provide an annual audit” (Department of Health, 2014, p. 9). Heads of EFM tend to be the ones that perceive *Technical Expertise & Experience* as most important within NHS Trusts as they are often responsible for compliance and require specialist knowledge to provide assurance: “I need specialist knowledge for the topics I am responsible for [...] to have an understanding of what trade staff are doing” (Head of EFM). In the area of *Benchmarking*, EFM staff also rely on AEs who – with

large client portfolios of NHS Trusts – are perfectly positioned to compare the performance of clients. However, in their role as independent experts, they can be conflicted when advising NHS Trusts on *Future technologies & their availability* as well as *Appropriate suppliers & technologies*. Within NHS Trusts, there seems to be a lack of support for NHS staff seeking for new technologies, as highlighted by a Manager: “It is left to my own personal reading – I never see any guidance on [future technologies]”. Relying on outdated legacy IT systems poses a substantial financial risk, as emphasised in a recent analysis by Government Security. The study estimated a significant financial jeopardy, ranging from £13-22bn over the next five years for the entire public sector, with a considerable portion attributed to the NHS (Cabinet Office, 2021).

Lastly, as observed in **Table 1**, *Environmental & Sustainability Awareness* was not suggested as an important knowledge area by any participants. This is alarming since the NHS was the first healthcare system to commit to a net-zero carbon target, stating that an “upskilled workforce will be needed to drive and implement the interventions” (NHSE/I, 2020, p. 41). However, the sustainability agenda has not yet reached the priorities of EFM managers at any level, and the lack of guidance from the central NHS further exacerbates this disconnection between overarching organisational goals and on-ground focus. This critical area demands urgent attention and strategic alignment.

5. Conclusion

This paper has sought to answer the research question: *What specific types of knowledge are important for staff at different levels within the EFM organisational hierarchy?* The results of the study reveal interesting trends in the knowledge areas across hierarchical levels within the EFM profession. **Figure 4** presents four broader categories of knowledge areas that show distinct patterns in terms of their importance at different job levels, highlighting the shifting priorities of EFM professionals across organisational levels. In addition, *Environmental & Sustainability Awareness* was included to illustrate the absence of priority on this strategically important topic. In conclusion, our analysis of knowledge priorities within EFM has uncovered intriguing patterns and disparities.

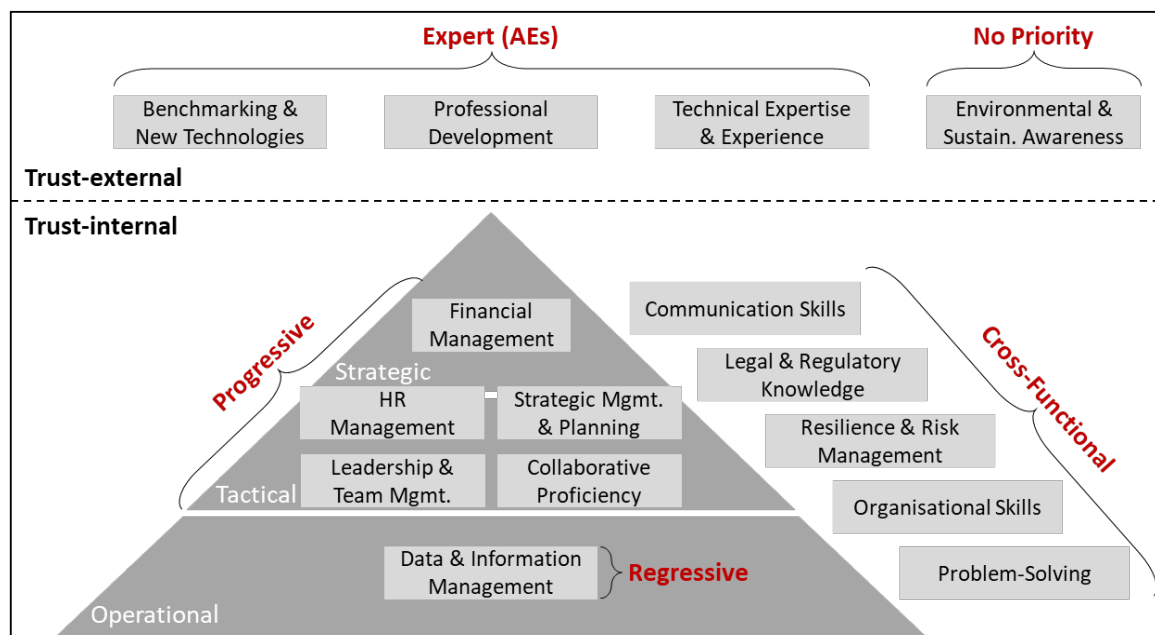


Figure 4: Summary of identified knowledge priority patterns (in red) across organisational levels of EFM

Reliance on External Experts

NHS staff heavily rely on external AEs for (i) *Technical Expertise & Experience*, (ii) *Benchmarking and New Technologies*, and (iii) *Professional Development*. In contrast to the trends observed in job descriptions, our study reveals a strong decrease in priority for *Technical Expertise & Experience* as professionals ascend from Head of EFM to Director of EFM level. This finding raises significant questions, especially considering the importance of technical proficiency and authority in advocating for crucial EFM issues at the board level. This shift in priorities warrants further exploration and understanding to align organisational expectations with the necessary expertise required at top management levels. The reliance on AEs regarding *Benchmarking & New*

Technologies needs to be addressed since it will be difficult to identify and effectively operate state-of-the-art technology if the organisation heavily depends on external experts or consultants who spend very limited time in the Trusts and also do not necessarily understand the local building context to the same degree as internal EFM staff. Especially at the Director of EFM level, there needs to be a better understanding and appreciation of the technologies and industry trends to make sure that appropriate funding budgets are allocated.

Lacking Focus on Sustainability & Digitalisation

Environmental & Sustainability Awareness is not a priority across all organisational levels, while *Data & Information Management* lacks emphasis on higher organisational tiers. Addressing these disparities between sustainability goals and on-ground focus is essential for strengthening the EFM workforce and bridging the skills gap. Furthermore, the findings confirm the sustainability and digitalisation skills gaps identified in the NHS Workforce Action Plan, reinforcing the need to develop “training programmes to develop [...] social, technical and digital skills, for example, Net Zero Carbon skills” (NHS, 2022, p. 9).

Need for stronger Priority on Collaborative Proficiency

Collaborative Proficiency emerges as crucial for Managers and Heads of EFM, underlining the necessity of interdisciplinary and inter-organisational collaboration; however, challenges in networking and prioritisation become evident, particularly at the Director of EFM level, despite the NHS’s emphasis on strategic alignment via the Integrated Care System. This will need to be addressed to turn around the “continued failure to embrace integrated care systems” (Stein et al., 2020, p. 2)

Strong emphasis on Financial Management by Directors of EFM

Directors of EFM appear to predominantly focus on financial matters, possibly because many Directors of EFM do not sit on the Trust Board but report through the Directors of Finance. These organisational structures can lead to a “conflict of interest since the Director of EFM is also our Finance Director” (Director). This can impede the ability of EFM teams to advocate for and secure funding for state-of-the-art technologies.

5.1 Contributions

This study makes a significant academic contribution to the field of EFM by identifying the varying knowledge needs across hierarchical levels within the profession. By uncovering these differences, the study provides a more nuanced understanding of the learning areas that are critical for career pathways in EFM. This contributes to the existing body of literature by enhancing our understanding of KM in the context of organisational hierarchies. Additionally, the evidence-based approach employed in this study offers a framework for designing targeted KS solutions that can be adapted and applied to other sectors or organisations, expanding the practical applications of this research.

The findings have important practical implications for KS and professional development. By clearly outlining the most important knowledge areas for specific staff groups, this research provides valuable guidance for designing professional development courses that address the specific needs of staff in diverse roles. This can guide managers and practitioners in designing tailored professional development plans for staff at various levels in the EFM domain, facilitating effective career pathways and enhancing organisational performance.

5.2 Limitations and Further Research

We acknowledge that the individual knowledge statements were condensed into overarching knowledge areas to align with the limited scope of the paper. While these areas were derived using extensive literature reviews (Awang et al., 2014; Hauptfleisch and Verster, 2011) and NHS guidelines for EFM, it might be valuable to reconsider these areas in light of the study’s findings to ensure their accuracy and relevance. For example, further research could employ hierarchical clustering techniques to analyse the individual statements, allowing for the identification of more nuanced trends and knowledge areas that hold specific importance for different EFM roles.

Acknowledgements

We would like to express our sincere gratitude to Karl Redmond from NHS England for his invaluable assistance in reviewing this paper. His expertise and insights significantly contributed to the refinement and enhancement of our research. We are deeply appreciative of his time, dedication, and constructive feedback, which played a crucial role in shaping the final version of this work. Additionally, we would like to thank the Studienstiftung des deutschen Volkes for their generous PhD funding which made this research possible.

References

- Alavi, M., Leidner, D.E., 2001. Review: Knowledge management and knowledge management systems: conceptual foundations and research issues. *MIS Q.* 25, 107–136. <https://doi.org/10.2307/3250961>
- Al-Busaidi, K.A., 2014. Knowledge workers' perceptions of potential benefits and challenges of inter-organizational knowledge sharing systems: a Delphi study in the health sector. *Knowl Manage Res Pract* 12, 398–408. <https://doi.org/10.1057/kmrp.2013.4>
- Alexander, K., 1996. *Facilities Management - Theory and Practice*, Facilities Management: Theory and Practice. <https://doi.org/10.4324/9780203475966>
- Anthony, R.N., 1965. Planning and control systems: a framework for analysis. Division of Research, Graduate School of Business Administration, Harvard
- Awang, M., Mohammad, A.H., Sapri, M., Rahman, S.A., 2014. Requisite Facilities Management Competencies for Sustainable Development at Higher Education Institutions 9.
- Baaki, T.K., Baharum, M.R., Ali, A.S., 2016. A review of sustainable facilities management knowledge and practice. *MATEC Web of Conferences* 66.
- Barlow, J.G., Koberle-Gaiser, M., Moss, R., Noble, A., Scher, P., Stow, D., 2009. Adaptability and innovation in healthcare facilities. Lessons from the past for future developments (Report), 22. HaCIRIC. <https://doi.org/10.25561/11726>
- Bröchner, J., Haugen, T., Lindkvist, C., 2019. Shaping tomorrow's facilities management. *Facilities* 37, 366–380. <https://doi.org/10.1108/F-10-2018-0126>
- Cabinet Office, 2021. Organising for Digital Delivery [WWW Document]. GOV.UK. URL <https://www.gov.uk/government/publications/organising-for-digital-delivery/organising-for-digital-delivery> (accessed 10.6.23).
- Davenport, T.H., 1998. Putting the Enterprise into the Enterprise System. *Harvard Business Review*.
- Davenport, T.H., Prusak, L., 1998. Working knowledge: how organizations manage what they know. Harvard Business School Press 15.
- Department for Education, 2023. Estate management competency framework.
- Department of Health, 2014. Health Technical Memorandum 00 Policies and principles of healthcare engineering.
- Dixon, N., 2000. Common knowledge (book excerpt): how companies thrive by sharing what they know. *Ubiquity* 2000. <https://doi.org/10.1145/334482.334491>
- Haugen, T., Klungseth, N.J., 2017. In-house or outsourcing FM services in the public sector: A review of 25 years research and development. *Journal of Facilities Management* 15. <https://doi.org/10.1108/JFM-06-2016-0022>
- Hauptfleisch, A.C., Verster, J.J.P., 2011. Facilities management: Proposals for practice improvement and development support through educational programmes in South Africa.
- Haywood, K., Potter, R., Froud, R., Pearce, G., Box, B., Muldoon, L., Lipton, R., Petrou, S., Rendas-Baum, R., Logan, A.-M., Stewart, K., Underwood, M., Matharu, M., 2021. Core outcome set for preventive intervention trials in chronic and episodic migraine (COSMIG): an international, consensus-derived and multistakeholder initiative. *BMJ Open* 11, e043242. <https://doi.org/10.1136/bmjopen-2020-043242>
- Holdt Christensen, P., 2007. Knowledge sharing: moving away from the obsession with best practices. *J of Knowledge Management* 11, 36–47. <https://doi.org/10.1108/13673270710728222>
- House of Commons, 2021. Workforce burnout and resilience in the NHS and social care Second Report of Session 2021–22.
- HSIB, 2021. Oxygen issues during the COVID-19 pandemic (No. I2020/022).
- IFMA, 2020. 11 Core Competencies of Facility Management.
- IHEEM, 2021. Career Route Map [WWW Document]. IHEEM. URL <https://www.iheem.org.uk/future-leaders/career-map/> (accessed 6.30.23).
- IHEEM, HefmA, 2021. Future Leaders - Healthcare Estates & Facilities Management Joint Workforce Strategy.
- Keraminiyage, K., Amaratunga, D., Haigh, R., 2004. A literature review of knowledge management, facilities management and link between those two disciplines. Presented at the 4th International Postgraduate Research Conference in the Built and Human Environment, University of Salford.
- Kolde, R., 2019. pheatmap: Pretty Heatmaps.
- Linstone, H.A., Turoff, M., 2002. The Delphi Method: Techniques and Applications 618.
- Love, P., Edwards, D., Love, J., Irani, Z., 2011. Champions of practice: context and habitus for unbounded learning in construction projects. *Facilities* 29, 193–208. <https://doi.org/10.1108/02632771111120510>
- McDermott, R., 1999. Nurturing Three Dimensional Communities of Practice.
- NHS, 2023. NHS Health Careers: Estates and facilities [WWW Document]. Health Careers. URL <https://www.healthcareers.nhs.uk/explore-roles/estates-and-facilities> (accessed 9.29.23).
- NHS, 2022. Estates and Facilities Workforce Action Plan (No. PAR292). London.
- NHS, 2019. The NHS Long Term Plan.
- NHS Digital, 2022. Estates Returns Information Collection, Summary page and dataset for ERIC 2021/22 [WWW Document]. NDRS. URL <https://digital.nhs.uk/data-and-information/publications/statistical/estates-returns-information-collection/england-2021-22> (accessed 6.29.23).
- NHS Employers, 2023. National profiles for Estates and Maintenance.

- NHS England, 2023. The NHS Premises Assurance Model (NHS PAM) [WWW Document]. URL <https://www.england.nhs.uk/wp-content/uploads/2023/05/Premises-Assurance-Model-NHS-PAM-2023.pdf> (accessed 6.29.23).
- NHS Estates, 1996. HFN 16: Re-engineering the facilities management service, Health Facilities Notes. Stationery Office Books, Great Britain.
- NHSE/I, 2020. Delivering a 'Net Zero' National Health Service. London.
- Nutt, B., 2000. Four competing futures for facility management. *Facilities* 18, 124–132. <https://doi.org/10.1108/02632770010315670>
- Pathirage, C., Haigh, R., Amaratunga, D., Baldry, D., 2008. Knowledge management practices in facilities organisations: a case study. *Journal of Facilities Management* 6, 5–22. <https://doi.org/10.1108/14725960810847431>
- Pitt, M., Tucker, M., 2008. Performance measurement in facilities management: Driving innovation? *Property Management* 26, 241–254. <https://doi.org/10.1108/02637470810894885>
- Stein, K.V., Goodwin, N., Miller, R., 2020. From Crisis to Coordination: Challenges and Opportunities for Integrated Care posed by the COVID-19 Pandemic. *Int J Integr Care* 20. <https://doi.org/10.5334/ijic.5595>
- Stubbs, D., Bashford, T., Gilder, F., Nourallah, B., Ercole, A., Levy, N., Clarkson, J., 2022. Can process mapping and a multisite Delphi of perioperative professionals inform our understanding of system-wide factors that may impact operative risk? *BMJ Open* 12, e064105. <https://doi.org/10.1136/bmjopen-2022-064105>

A Leadership and Governance Stage Model (LGSM) in Digital Transformation in Data Management

Shuo Yan and Jeff Jones

WMG, The University of Warwick, Coventry, UK

christina-yan.yan@warwick.ac.uk

j.a.jones@warwick.ac.uk

Abstract: In this era of digital transformation, organisations and individuals have the ability to generate, collect, process, and analyse a vast volume of data to gain benefits and valuable insights. However, despite recognising the competitive advantage of digital transformation in data management, they often face challenges in navigating the transformation process and aligning their existing practices with on-premise technologies. Leadership and governance play a very significant role in digital transformation procedures. The main objectives of this research are 1) to establish a Leadership and Governance Stage Model (LGSM), which provides a standardised, structured, and objective roadmap for organisations to determine their current leadership and data governance maturity stage in digital transformation in data management and 2) to guide organisations in progressing to the next maturity stage by using LGSM as a framework. This research adopts a qualitative approach, utilising a Systematic Literature Review (SLR) conducted over the past ten years, applying Grounded Theory. A total of 14 well-defined Capability Maturity Models (CMMs) of data management were reviewed, summarised, and consolidated. In this way, LGSM is established, comprising six stages: Stages 0, 1, 2, 3, and 4, with Stage 5 representing the most developed and mature stage. The holistic view of this stage model has been summarised at the end of this research, which demonstrates the significance of leadership and governance in digital transformation.

Keywords: Data management, Capability maturity model, Stage model, Digital transformation, Data governance, Leadership

1. Introduction

This paper underscores the importance and maturity stages of digital transformation in data management. In today's data-driven landscape, data management is pivotal (Meng, 2019; Ahsan *et al.*, 2022). With organisations and individuals producing vast amounts of data daily, effective management and utilisation of this data have become paramount for success (Adrian *et al.*, 2016). Data management's significance permeates various dimensions, influencing numerous facets of business operations, decision-making, innovation, and regulatory compliance (Hribar Rajterič, 2010; Barua, Mani and Mukherjee, 2012; Cai and Zhu, 2015; Ahmed Zainul Abideen *et al.*, 2021). By leveraging data effectively, organisations can unearth invaluable insights, attain a competitive edge, and effect significant change in their industries (Ahsan *et al.*, 2022; Alsayed and Aqel, 2022). Thus, proficient data management is essential for organisations aiming to expedite and enhance their decision-making processes.

For more sophisticated data analysis, organisations must gather vast amounts of data (Forum, 2018; Abraham, Schneider and vom Brocke, 2019). This encompasses structured data from within the organisation, such as financial reports, inventory data, and customer transactions, as well as unstructured data from external sources like clickstreams, text documents, emails, and sensor data (Abraham, Schneider and vom Brocke, 2019). Digital transformation becomes vitally important when aiming to effectively manage and leverage these data (Baranauskas and Raišienė, 2022). Data from the World Economic Forum in 2018 suggests that by 2030, 70% of organisations will reap the benefits of digital transformation, leading to enhanced value (Forum, 2018). The significance of digital transformation became especially evident post-COVID-19, and people recognised its importance across several domains, including remote work and collaboration, business continuity, digital customer engagement, data-driven decisions, scalability, flexibility, and cost efficiency (Hai, Van and Thi Tuyet, 2021). For a comprehensive digital transformation anchored in data lifecycle management—which encompasses steps such as data acquisition, data documentation, data quality control, data analytics, data preservation, and data visualisation—organisations must contemplate the distinct requisites of each phase (Halper and Stodder, 2014; Qin, Crowston and Kirkland, 2014; Hernandez-Hall, 2021). At the same time, every step in the data lifecycle management process demands consideration of multiple facets including strategic planning, strong leadership and governance, capability evaluation, methodical resource allocation, targeted training and development, and consistent process assessments related to it (Halper and Stodder, 2014; Qin, Crowston and Kirkland, 2014; Hernandez-Hall, 2021). These must be meticulously considered and outlined to facilitate a triumphant digital transformation in data management.

This research mainly focuses on improving the leadership and governance in digital transformation from the perspective of data lifecycle management. In the progress of realising digital transformation, leadership and

governance play a significant role (Cai and Zhu, 2015; Hernandez-Hall, 2021). Effective leadership provides a clear vision and strategy for digital transformation, facilitating that all efforts are aligned toward a common purpose (Cai and Zhu, 2015; Hernandez-Hall, 2021). Additionally, leadership plays a critical role in driving change, fostering a digital-first mindset, and encouraging the adoption of new technologies and practices (Hernandez-Hall, 2021). Robust governance facilitates that decisions are based on data, well-considered, and consistent with the organisation's overarching goals (Halper and Stodder, 2014; Qin, Crowston and Kirkland, 2014; Hernandez-Hall, 2021). Also, governance helps in allocating resources effectively, prioritising initiatives, and monitoring that resources are used efficiently (Qin, Crowston and Kirkland, 2014). Therefore, this research aims to explore the current maturity and performance of an organisation's leadership and data governance in the progression of digital transformation in data management. It assesses where organisations currently stand and the potential paths they can take in the future to expedite the realisation of benefits from digital transformation in data management. To precisely determine an organisation's current position in this journey, this paper introduces the Leadership and Governance Stage Model (LGSM).

Stage Model also called the Capability Maturity Model (CMM), was initially published in the book "Managing the Software Process" by Watts Humphrey in 1989 (Humphrey, 1989). The concept of maturity plays a significant role in assessing the progress and readiness of organisations, and it encompasses a continuum that ranges from extreme immaturity to extreme maturity (Humphrey, 1989). Maturity models provide a framework for identifying the strengths and weaknesses of a particular domain or organisation (Humphrey, 1989). By utilising maturity models, organisations can gain valuable insights into their current capabilities and identify areas for improvement (Hernandez-Hall, 2021). These models codify best practices, allowing organisations to benchmark their performance against established standards (Vesset *et al.*, 2015; Klievink *et al.*, 2017). Therefore, the main objectives of this paper are: 1) to establish LGSM, which provides a standardised, structured, and objective roadmap for organisations to determine their current leadership and data governance maturity stage in digital transformation and 2) to guide organisations in progressing to the next maturity stage by using the this stage model as a framework. This research is qualitative in nature, employing Grounded Theory as its methodology. The authors have reviewed papers pertaining to leadership and governance in digital transformation for data management over the past ten years, with 14 papers scrutinized in depth. By amalgamating insights from these 14 papers, a comprehensive and precise LGSM has been developed.

2. Systematic Literature Review for the Last ten Years

2.1 The Research Scope for LGSM in Data Management

After conducting a comprehensive literature review, it was discovered that only a few specific CMMs related to data management have been documented. Most maturity models are about Business Intelligence (BI) (Hribar Rajterič, 2010; Chuah and Wong, 2013; Fedouaki, Okar and Alami, 2013; Treviño and Gamboa, 2014), Artificial Intelligence (AI) (Raghad Baker Sadiq *et al.*, 2021a, 2021b), IoT applications (Asdecker and Felch, 2018; Klisenko and Asensio, 2022), Project Management ('Using the project management maturity model; strategic planning for project management, 2d ed.', 2005; Chang and Wei, 2013; Farrokh and Mansur, 2013; Meng, 2019; Araújo, 2020) and data warehouse (Hidayanto *et al.*, 2022). However, data management is the foundational process of creating, obtaining, storing, protecting, and processing data to ensure its accessibility, reliability, and timeliness. Everything else – BI, AI, IoT, data warehouses – relies on proper data management (Comuzzi and Patel, 2016). In the past decade, there has been a paucity of research regarding CMMs of leadership and governance in the realm of data management. This research therefore concentrates on digital transformation within this area. To develop the LGSM, the authors exclusively consolidate and delineate the domains of leadership and data governance as they relate to data management CMMs.

2.2 Databases and Search Strings for LGSM

To establish a more comprehensive and precise LGSM, a ten-year Systematic Literature Review was conducted in this research. Based on the results generated by the search strings shown in **Table 1** that were created by the author, there are several databases were used in this research:

- ProQuest ABI/INFORM Global,
- ProQuest ABI/INFORM Trade & Industry,
- ProQuest Dissertations & Theses Global, and
- ProQuest SciTech Premium Collection,
- Web of Science,
- Engineering Village.

At the end of the third round of SLR, there are 14 papers in total associated with CMMs for data management.

Table 1: Databases and Search Strings for LGSM

Database	Search String(s)
ProQuest ABI/INFORM Global	(((ti(capability maturity model) OR ti(maturity model) OR ti(capability model) OR ti(stage model) OR ti(conceptual framework)) AND (ti(data management) OR ti(leadership) OR ti(governing big data) OR ti(big data application) OR ti(data governance) OR ti(big data))) AND pd(20120426-20220426) .
ProQuest ABI/INFORM Trade & Industry	
ProQuest Dissertations & Theses Global	
ProQuest SciTech Premium Collection	
Web of Science	data management (Title) or leadership (Title) or governing big data (Title) or big data application(Title) or data governance (Title) or big data (Title) 2012-04-26 to 2022-04-26 capability maturity model (Title) or maturity model (Title) or capability model(Title) or stage model (Title). 2012-04-26 to 2022-04-26
Engineering Village	(((((capability maturity model OR maturity model OR stage model) WN TI) AND ((data management OR leadership OR governing big data OR big data application OR data governance OR big data) WN TI))) AND ((2022 OR 2021 OR 2020 OR 2019 OR 2018 OR 2017 OR 2016 OR 2015 OR 2014 OR 2013) WN YR))

3. Research Method

3.1 Grounded Theory with Nvivo

In this research, Grounded Theory, a qualitative analysis method, serves as the main analytical tool for the systematic literature review (SLR), which was introduced by Glaser and Strauss in their 1965 book "Awareness of Dying" (Barney and Anselm, 2017). This research utilised Nvivo to employ Grounded Theory in a systematic literature review, aiming to craft a more encompassing data management capability maturity model. The 14 papers linked to data management maturity models were integrated into Nvivo. The research process commenced with line-by-line coding or "open coding" using Nvivo, spotlighting and categorising salient concepts from the papers into subcategories, and subsequently, main categories. Essentially, the material was dissected into conceptual chunks, termed as different "codes" (Bringer, Johnston and Brackenridge, 2006). The SLR's final phase saw the researcher compare and summarise these codes to grasp their inherent meaning. This led to the extraction of each paper's core elements, which were then amalgamated across different stages and dimensions to formulate the Leadership and Governance Stage Model (LGSM) presented in this research.

4. The Description of Each Stage in LGSM

This research examines leadership and governance in digital transformation for data management. Leadership involves top managers guiding the organisation to realise its significance and take action for digital transformation. Data governance means setting policies and monitoring the processes of digital transformation in data management. It defines roles, ensures clear communication, and uses metrics to measure and improve effectiveness. As **Figure 1** shows below, to precisely illustrate the evolution of leadership and governance in digital transformation pertaining to data management, the LGSM has been introduced, and anchored in seven dimensions: **Data Acquisition, Documentation and Quality, Data Description and Representation, Data Dissemination and Sharing, Data Repository Services and Preservation, Data Analysis, Budget, and Operational Infrastructure**. By consolidating and summarising the domain of leadership and data governance from the previous 14 CMMs, six stages, ranging from Stage 0 to Stage 5, have been delineated below to characterise the maturity levels of leadership and governance in digital transformation.

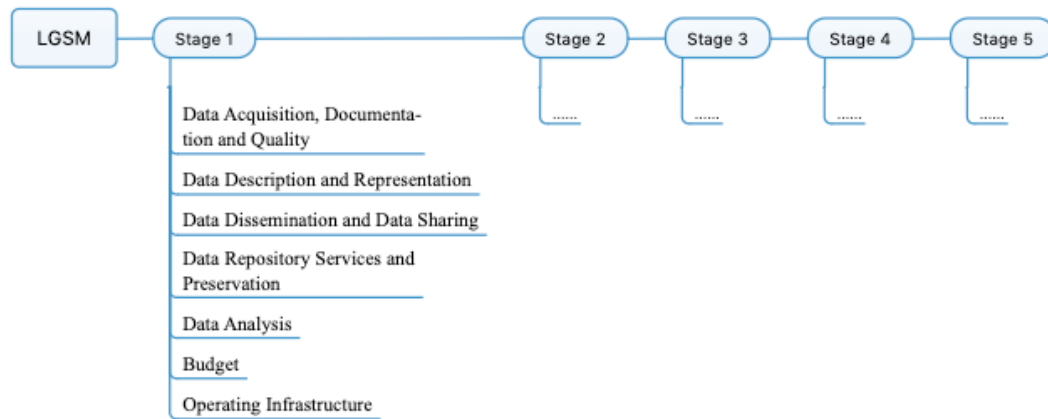


Figure 1: Structure of LGSM

4.1 Stage 0 – Ignorance

In stage 0, “Ignorance”, is where the organisation has no capabilities or any knowledge of data management. The importance of data management does not appear to be a component of the organisation’s core beliefs, so there is a lack of knowledge about how to store and use data by staff and top managers (Qin, Crowston and Kirkland, 2014; Farah, 2017). In addition, there is a lack of leadership in policy establishment in data collection, documentation, quality control, data visualisation, data sharing, data analytics, budget allocation and operating infrastructure (Halper and Stodder, 2014; Sulaiman, Cob and Ali, 2015; Comuzzi and Patel, 2016). There are no data structures and no data management strategy at this stage, and data is created by manual observation and recorded in notes individually or by small groups of people (Halper and Stodder, 2014; Sulaiman, Cob and Ali, 2015; Comuzzi and Patel, 2016). Therefore, there are no typical data management procedures and processes, data analytics, data visualisation tools, or any infrastructure or IT solutions at this stage. Senior managers and staff are not aware that money should be spent on data management (Qin, Crowston and Kirkland, 2014).

4.2 Stage 1 – Considering and Exploring

Stage 1, “Considering and Exploring”, is where some individuals and top managers are considering minimally about data management, but still, most of the employees are unsure of how data management links to the enterprise's objectives. The culture of technical data management has been entrenched in a negative way towards IT-driven innovation (Zitoun *et al.*, 2021). Some staff say that data management is very important for the company, but most say that it is not very important at all (El-Darwiche *et al.*, 2014). Still, there is a lack of leadership in policy establishment in data collection, documentation, quality control, data visualisation, data sharing, data analytics, budget allocation and operating infrastructure (Qin, Crowston and Kirkland, 2014; Vesset *et al.*, 2015; Olszak and Mach-Krół, 2018a). Investment justification is not required as the budget is solely focused on basic business operations and does not include data quality audits (Vesset *et al.*, 2015; Hernandez-Hall, 2021). The operational decision is made solely based on senior managers’ experience and beliefs (Qin, Crowston and Kirkland, 2014; Vesset *et al.*, 2015; Olszak and Mach-Krół, 2018a). A data management strategy cannot be created because there aren't any dedicated resources and no staff have data skills (Comuzzi and Patel, 2016; Olszak and Mach-Krół, 2018a; Herselman, Wayi and Olaitan, 2019; Hernandez-Hall, 2021; Zitoun *et al.*, 2021). Some staff members are primarily motivated by a personal interest in data management, but lack the necessary skills to keep up with the rapid rate of technological change (Comuzzi and Patel, 2016; Olszak and Mach-Krół, 2018a; Herselman, Wayi and Olaitan, 2019; Hernandez-Hall, 2021; Zitoun *et al.*, 2021).

4.3 Stage 2 – Understanding and Practising

In stage 2, “understanding and practising”, where data needs and benefits of data management have been noticed initially, and the organisation has started formal data analytics, descriptive analytics is used in this stage, which aims to evaluate the previous performance of the firm. Staff members sometimes talk about the idea or technology behind the data management (El-Darwiche *et al.*, 2014; Sulaiman, Cob and Ali, 2015; Hernandez-Hall, 2021). When employees see that data management technology can help their company meet its goals, they try it out (Vesset *et al.*, 2015; Comuzzi and Patel, 2016). Staff from the IT department have looked into and worked on their data management knowledge and skills (Vesset *et al.*, 2015; Comuzzi and Patel, 2016). For leadership and data governance, the data management policies have been codified for ad-hoc projects rather than the entire organisation, for instance, policies related to data collection, data documentation and data

quality checks have been established at the department level or business units such as the policies of data naming standards (Halper and Stodder, 2014; Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016). The organisation has a strategic mission and goals for initiating data collection and/or utilisation (Hernandez-Hall, 2021). The policies related to data description and representation have been codified for ad-hoc projects, such as policies related to the metadata establishment (Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016). Also, the policies related to data sharing and data confidentiality have been codified for ad-hoc projects (Halper and Stodder, 2014; Qin, Crowston and Kirkland, 2014). However, the policies related to data analytics, budget allocations, and operating infrastructures have not been codified in the organisation. For budget allocation, the budget is decentralised and based on individual department plans the budget is decentralised and based on individual department plans or ad-hoc projects (Vesset *et al.*, 2015; Hernandez-Hall, 2021). Investment justification is required for a clearly defined operational problem or needs (Vesset *et al.*, 2015). For operating infrastructure, the organisation installs and deploys infrastructures on an ad-hoc basis (Vesset *et al.*, 2015; Comuzzi and Patel, 2016). There is no defined architecture for operating infrastructure (Vesset *et al.*, 2015; Comuzzi and Patel, 2016). Data management tools are mostly used by people who have a lot of experience with technology (Hernandez-Hall, 2021; 'Hortonworks-Big-Data-Maturity-Assessment.pdf', no date).

4.4 Stage 3 – Defined and Managed

In stage 3, "Defined and managed", where data needs and benefits have been addressed at the department level, to find out the problems that exist in daily operations, the organisation starts doing diagnostic analytics at this stage. The company has a positive and proactive attitude about how to manage its data (El-Darwiche *et al.*, 2014; Qin, Crowston and Kirkland, 2014; Herselman, Wayi and Olaitan, 2019; Zitoun *et al.*, 2021). For leadership and governance, there is at least one executive sponsor of data management, and the organisation places a high value on evidence-based operations and decisions at all levels of the organisation. Staff members understand how data management can impact operations and decision-making processes and are all actively involved in the data management tool's use (Botcheva, White and Huffman, 2002; Qin, Crowston and Kirkland, 2014; Farkas, Hinchliffe and Houk, 2015; Farah, 2017). Different departments' staffs have accessed, addressed, and defined data management knowledge and abilities (Qin, Crowston and Kirkland, 2014). Each department has an obligation to provide input on data management technologies and tools (Zitoun *et al.*, 2021). The policies related to data collection, data documentation and data quality checks, data description and representation, data sharing and data confidentiality, data preservation, data curation, and data backup have been established at least at the department level, and most of them have been defined throughout the entire organisation (Halper and Stodder, 2014; Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016). Besides, the organisation is considering establishing some policies related to data analytics aligning with its business objectives (Sulaiman, Cob and Ali, 2015). For budget allocation, there is a mixed budget structure utilised in the entire organisation, including centralised and decentralised budgeting (Vesset *et al.*, 2015). Except for the normal procedures and processes, before the investment in data management, the organisation decides to utilise Proof of Concepts (POCs) to evaluate new data, tools, technologies and equipment (Farah, 2017). For operating infrastructure, Key Performance Indicators (KPIs) are solely applied to measure the technology initiatives (Vesset *et al.*, 2015). People at the organisation have a defined plan that includes goals to improve how they collect and use data, and there is a roadmap is being drawn up for all data management projects to follow (Clarke, 2012; Halper and Stodder, 2014; Farkas, Hinchliffe and Houk, 2015). Business leaders say they will spend more money to improve and keep an eye on their data management strategy (Gantz and Reinsel, 2011; Qin, Crowston and Kirkland, 2014; Hernandez-Hall, 2021). Job descriptions for IT departments include data management duties (Halper and Stodder, 2014; Qin, Crowston and Kirkland, 2014; Hernandez-Hall, 2021) When necessary, free on-the-job training, including data training, is offered for specific project requirements (Halper and Stodder, 2014; Hernandez-Hall, 2021).

4.5 Stage 4 – Standardised and Intelligent

Stage 4, "Standardised and intelligent", is where the majority of employees in the organisation have faith in the advantages of data management, and data needs, data management policies, and quantitative quality goals have all been set throughout the entire company (Qin, Crowston and Kirkland, 2014). Besides the descriptive and diagnostic analytics, the organisation has started doing predictive analytics for the decision-making process (Halper and Stodder, 2014; Zitoun *et al.*, 2021). For leadership and data governance, data management is fully supported by the top management (Olszak and Mach-Król, 2018a). It is important for everyone in an organisation to know and accept the value of good data management (Halper and Stodder, 2014; Comuzzi and Patel, 2016). All employees, including those in the information technology and business departments, are fully knowledgeable about data management technology and tools (Halper and Stodder, 2014; Comuzzi and Patel,

2016). All the policies, procedures and processes related to data collection, data preservation, data visualisation, data sharing, and data analytics have been defined throughout the entire organisation (Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016; Hernandez-Hall, 2021). In addition, policies related to data definition, data lineage and data usage have been defined throughout the organisation (Vesset *et al.*, 2015; Comuzzi and Patel, 2016). There is a governance committee to oversee data quality management (Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016; Hernandez-Hall, 2021). To assess the effectiveness of data usage, the quantitative matrix for data governance has been defined such as KPI and Service Level Agreements (SLAs) (El-Darwiche *et al.*, 2014; Qin, Crowston and Kirkland, 2014). There is a central architecture board composed of experts and stakeholders who have defined the guidelines and standards in order to govern the deployment of technologies, tools, and equipment (Vesset *et al.*, 2015). For budget allocations, a permanent budget line associated with data management has been carried out throughout the entire organisation, and there is a mixed strategy of utilising centralised, decentralised, and ad-hoc budget allocation in the organisation (Vesset *et al.*, 2015; Comuzzi and Patel, 2016; Hernandez-Hall, 2021). Ownership of the improvement of data management is defined, as gaining ownership of high KPIs and improving data management, staff are becoming more proactive in defining process/data ownership (King and Kraemer, 1984; Olszak and Mach-Król, 2018a; Hernandez-Hall, 2021). At this stage, the main goal of governance is the balance between data needs including relevant, timely and consistent data for analytics and data confidentiality issues (Halper and Stodder, 2014). Data management responsibilities are included in the job descriptions of the majority of employees who handle data, and training is given for all the tasks in the organisation at a charge (Halper and Stodder, 2014; Vesset *et al.*, 2015). The organisation has a business plan in place that includes objectives for expanding data use beyond present practices, and quantitative quality goals have been set up for monitoring the effectiveness of data and operation management (Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016).

4.6 Stage 5 – Optimised and Innovating

In stage 5, “Optimised and innovating”, data management facilitates operations, and evidence-based decision-making is fundamental to the organisation’s culture and leadership style (Olszak and Mach-Król, 2018b). The company uses prescriptive analytics, which has enabled both internal and external use of structured and unstructured data analytics for the innovation (Halper and Stodder, 2014; Klievink *et al.*, 2017). For leadership and data governance, all policies, procedures and processes related to data acquisition, documentation and data quality control, data sharing, data preservation, data visualisation, data analytics, and operating infrastructures have been evaluated on a regular basis based on the quantitative quality feedback from the entire organisation (Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016). Specifically, there are formalised quantitative approaches, procedures, and processes that have been established to evaluate the performance, strategies and initiatives of these data management activities (Qin, Crowston and Kirkland, 2014; Comuzzi and Patel, 2016). In order to learn from other businesses and find more cutting-edge technologies and solutions, information and data management skills have been shared internally and outside from the standpoint of the organisation (Qin, Crowston and Kirkland, 2014; Carvalho *et al.*, 2019). The long-term data management plan has been established and is being regularly reviewed and monitored. All employees of this organisation have job descriptions that include information on data management duties (Herselman, Wayi and Olaitan, 2019). The organisation offers free data training to all of its employees (Hernandez-Hall, 2021).

5. Discussion and Conclusion

After reviewing a decade's worth of Capability Maturity Models (CMMs) related to data management, this paper presents a refined Leadership and Governance Stage Model (LGSM). Using Grounded Theory, the authors amalgamated leadership and data governance domains from 14 CMMs. The model begins with Stage 0, representing an organisation lacking digital data management initiatives, and culminates in Stage 5, signifying comprehensive leadership and mature data governance. The progression patterns of leadership and governance in the digital transformation of data management, based on descriptions from **sections 4.1-4.6**, are as follows. For dimensions like Data Acquisition, Documentation and Quality, Data Description and Representation, Data Dissemination and Sharing, and Data Repository Services and Preservation: Leadership typically begins to approve and support policy establishments by Stage 3. By Stages 4 and 5, leaders are more actively engaged in governance activities, with improved policies and regular evaluation guides in place. Influenced by leadership, staff across all levels actively participate in activities and trust the tools and skills related to data management from Stage 3 onwards. Policies concerning data management are typically established at the department level or for ad-hoc projects by Stage 2. By Stage 3, these policies are well-defined across the entire organisation. Quality quantitative goals related to these policies are established by Stage 4, with evaluations for continuous improvement introduced by Stage 5. Steering committees specific to each domain are usually considered in

Stage 3, formed by Stage 4, and quantitative metrics like KPIs and SLAs for monitoring data management performance are defined by Stage 4. For dimensions of Data Analysis, Budget, and Operational Infrastructure: Leaders engage in policy establishments from Stage 2. By Stage 4, staff are fully involved in data analytics, considering budget allocations, and applying data management infrastructures. Certain departments, like IT, might define some policies, but all policies related to data analytics, budget allocation, and operational infrastructure are established organisation-wide by Stage 4. Stage 5 introduces regular evaluations for enhancing analytic capabilities and the efficacy of budget allocation and tools/techniques for managing data. The utilisation of data management infrastructures begins being monitored by steering committees in Stage 2, with quantitative metrics introduced by Stage 3 — this is earlier compared to other governance activities.

Regarding the contribution of this research, numerous Capability Maturity Models (CMMs) or Stage Models already exist. However, three key observations emerge from our investigation: 1) *Few CMMs from the past decade address digital transformation in data management.* 2) *CMMs specifically discussing both leadership and governance within the context of digital transformation in data management are scarce.* 3) *While there are limited papers about leadership in digital transformation concerning data management, they neither cover the complete data lifecycle (from data acquisition to data visualization) nor discuss data governance comprehensively.* Many CMMs on data management only touch upon leadership and governance tangentially, which, in the view of this study's authors, is inadequate. Leadership and governance extend beyond mere top management awareness. These realms encompass the broad dissemination of digital transformation concepts throughout the organisation, comprehension of evolving digital tools, support for policy formulation and execution, and setting both immediate and long-term organisational objectives to guide digital transformation in data management, among other roles. Therefore, this research advocates for a deeper and more nuanced understanding of leadership and governance, deeply rooted in the data lifecycle, aiming to offer precise and actionable insights for digital transformation. The distinctive contributions of this paper include: 1) *The introduction of a unique Stage Model for leadership and governance in the digital transformation of data management, encapsulating the entire spectrum of contemporary data lifecycles.* 2) *The presentation of a comprehensive Stage Model that serves as a roadmap for organisations, enabling them to ascertain their current standing in data management and navigate towards future growth.*

Regarding limitations and recommendations, while this research discusses leadership and data governance broadly, approaches to data management can differ across industries. Thus, it is suggested that the LGSM be adapted and refined for specific sectors, such as its application to research data management within academia. A detailed case study is advocated for subsequent research. Discussions regarding the weighting and ranking of LGSM's dimensions in various industries would also be beneficial. Moreover, the authors suggest that subsequent research on CMMs should either retain these dimensions or further refine them. Such an approach accentuates the progression within each stage, enabling users to clearly recognise both the strengths and limitations of their current stance.

References

- Abraham, R., Schneider, J. and vom Brocke, J. (2019) 'Data governance: A conceptual framework, structured review, and research agenda', *International Journal of Information Management*. Available at: <https://doi.org/10.1016/j.ijinfomgt.2019.07.008>.
- Adrian, C. et al. (2016) 'Towards developing strategic assessment model for big data implementation: a systematic literature review', *Int. J. Adv. Soft Compu. Appl*, 8(3).
- Ahmed Zainul Abideen et al. (2021) 'Leveraging Capabilities of Technology into a Circular Supply Chain to Build Circular Business Models: A State-of-the-Art Systematic Review', *Sustainability*, 13(16), p. 8997. Available at: <https://doi.org/10.3390/su13168997>.
- Ahsan, T. et al. (2022) 'IoT Devices, User Authentication, and Data Management in a Secure, Validated Manner through the Blockchain System', *Wireless Communications & Mobile Computing (Online)*. Edited by Samarendra Nath Sur, 2022. Available at: <https://doi.org/10.1155/2022/8570064>.
- Alsayed, A.K. and Aqel, S.A. (2022) 'Decision -Making Quality as a Mediating Variable between Knowledge Management Operations and Creative Behavior: An Applied Study on Al-Shifa Medical Complex in Palestine', *AAU Journal of Business and Law*, 6(1). Available at: <https://doi.org/10.51958/AAUJBL2022V6I1P4>.
- Araújo, A.J.S.M.A. de (2020) *Applying an Adaptation of the Prado Project Management Maturity Model in an Academic Context, PQDT - Global*. Master's. Universidade do Minho (Portugal). Available at: <http://0-search.proquest.com.pugwash.lib.warwick.ac.uk/dissertations-theses/applying-adaptation-prado-project-management/docview/2587739618/se-2?accountid=14888>.
- Asdecker, B. and Felch, V. (2018) 'Development of an Industry 4.0 maturity model for the delivery process in supply chains', *Journal of Modelling in Management*, 13(4), pp. 840–883. Available at: <https://doi.org/10.1108/JM2-03-2018-0042>.

- Baranauskas, G. and Raišienė, A.G. (2022) 'Transition to Digital Entrepreneurship with a Quest of Sustainability: Development of a New Conceptual Framework', *Sustainability*, 14(3), p. 1104. Available at: <https://doi.org/10.3390/su14031104>.
- Barney, G.G. and Anselm, L.S. (2017) *Awareness of Dying*. New York: Routledge. Available at: <https://doi.org/10.4324/9781351327923>.
- Barua, A., Mani, D. and Mukherjee, R. (2012) 'Measuring the business impacts of effective data', *Report accessed at* http://www.sybase.com/files/White_Papers_on_Sep_15_p_2012.
- Botcheva, L., White, C.R. and Huffman, L.C. (2002) 'Learning culture and outcomes measurement practices in community agencies', *American Journal of Evaluation*, 23(4), pp. 421–434.
- Bringer, J.D., Johnston, L.H. and Brackenridge, C.H. (2006) 'Using computer-assisted qualitative data analysis software to develop a grounded theory project', *Field methods*, 18(3), pp. 245–266.
- Cai, L. and Zhu, Y. (2015) 'The Challenges of Data Quality and Data Quality Assessment in the Big Data Era', *Data Science Journal*, 14(0), p. 2. Available at: <https://doi.org/10.5334/dsj-2015-002>.
- Carvalho, J.V. et al. (2019) 'A health data analytics maturity model for hospitals information systems', *International Journal of Information Management*, 46, pp. 278–285.
- Chang, X.N. and Wei, B. (2013) 'The Application of Project Management Maturity Model', *Applied Mechanics and Materials*, 475–476 (Sensors, Measurement and Intelligent Materials II), pp. 1707–1712. Available at: <https://doi.org/10.4028/www.scientific.net/AMM.475-476.1707>.
- Chuah, M.-H. and Wong, K.-L. (2013) 'An Enterprise Business Intelligence Maturity Model: Case Study Approach', *IEEE Conferences*, pp. 1–4. Available at: <https://doi.org/10.1109/ICITCS.2013.6717802>.
- Clarke, S. (2012) *Information systems strategic management: an integrated approach*. Routledge.
- Comuzzi, M. and Patel, A. (2016) 'How organisations leverage Big Data: a maturity model', *Industrial Management & Data Systems*, 116(8), pp. 1468–1492. Available at: <https://doi.org/10.1108/IMDS-12-2015-0495>.
- El-Darwiche, B. et al. (2014) 'Big data maturity: An action plan for policymakers and executives', *The global information technology report*, 43, p. 51.
- Farah, B. (2017) 'A Value Based Big Data Maturity Model', *Journal of Management Policy and Practice*, 18(1), pp. 11–18.
- Farkas, M.G., Hinchliffe, L.J. and Houk, A.H. (2015) 'Bridges and barriers: Factors influencing a culture of assessment in academic libraries'.
- Farrokh, J. and Mansur, A.K. (2013) 'Project Management Maturity Models and Organizational Project Management Maturity Model (OPM3 registered): A Critical Morphological Evaluation', *Proceedings of World Academy of Science, Engineering and Technology*, (77), p. 48.
- Fedouaki, F., Okar, C. and Alami, S.E. (2013) 'A maturity model for Business Intelligence System project in Small and Medium-sized Enterprises: an empirical investigation', *International Journal of Computer Science Issues (IJCSI)*, 10(6), pp. 61–69.
- Forum, W.E. (2018) 'Digital Transformation Initiative Maximizing the Return on Digital Investments', in. " World Econ. Forum.
- Gantz, J. and Reinsel, D. (2011) 'Extracting value from chaos', *IDC view*, 1142(2011), pp. 1–12.
- Hai, T.N., Van, Q.N. and Thi Tuyet, M.N. (2021) 'Digital transformation: Opportunities and challenges for leaders in the emerging countries in response to COVID-19 pandemic', *Emerging Science Journal*, 5(1), pp. 21–36.
- Halper, F. and Stodder, D. (2014) 'TDWI analytics maturity model guide', *TDWI research*, pp. 1–20.
- Hernandez-Hall, A.M. (2021) *Nonprofit Data Management: A Stage Model*. PhD Thesis. University of Nevada, Las Vegas.
- Herselman, M., Wayi, N. and Olaitan, O. (2019) 'A Data Governance Maturity Evaluation Model for government departments of the Eastern Cape province, South Africa', *South African Journal of Information Management*, 21(1), pp. 1–12.
- Hidayanto, A.N. et al. (2022) 'Data warehouse capability maturity model assessment for efficient monitoring process: a case study in National Narcotics Board', *IOP Conference Series. Earth and Environmental Science*, 969(1), p. 012055. Available at: <https://doi.org/10.1088/1755-1315/969/1/012055>.
- 'Hortonworks-Big-Data-Maturity-Assessment.pdf' (no date). Available at: <http://hortonworks.com/wp-content/uploads/2016/04/Hortonworks-Big-Data-Maturity-Assessment.pdf> (Accessed: 9 July 2022).
- Hribar Rajterič, I. (2010) 'Overview of business intelligence maturity models', *Management: journal of contemporary management issues*, 15(1), pp. 47–67.
- Humphrey, W.S. (1989) *Managing the software process*. Addison-Wesley Longman Publishing Co., Inc.
- King, J.L. and Kraemer, K.L. (1984) 'Evolution and organizational information systems: an assessment of Nolan's stage model', *Communications of the ACM*, 27(5), pp. 466–475.
- Klievink, B. et al. (2017) 'Big data in the public sector: Uncertainties and readiness', *Information systems frontiers*, 19(2), pp. 267–283.
- Klisenko, O. and Asensio, E.S. (2022) 'Towards a Maturity Model for IoT Adoption by B2C Companies', *Applied Sciences*, 12(3), p. 982. Available at: <https://doi.org/10.3390/app12030982>.
- Meng, Y. (2019) 'Establishment and application of Enterprise management maturity model based on multimedia data information systems', *Multimedia Tools and Applications*, 78(4), pp. 4503–4525. Available at: <https://doi.org/10.1007/s11042-018-5999-0>.
- Olszak, C.M. and Mach-Król, M. (2018a) 'A Conceptual Framework for Assessing an Organization's Readiness to Adopt Big Data', *Sustainability*, 10(10), p. 3734. Available at: <https://doi.org/10.3390/su10103734>.

- Olszak, C.M. and Mach-Król, M. (2018b) 'A Conceptual Framework for Assessing an Organization's Readiness to Adopt Big Data', *Sustainability*, 10(10), p. 3734. Available at: <https://doi.org/10.3390/su10103734>.
- Qin, J., Crowston, K. and Kirkland, A. (2014) 'A Capability Maturity Model for Research Data Management.'
- Qin, T. (2021) 'Application of hybrid model of big data and BP network on strategy prediction', *Journal of Physics: Conference Series*, 1941(1). Available at: <https://doi.org/10.1088/1742-6596/1941/1/012044>.
- Raghad Baker Sadiq *et al.* (2021a) 'Artificial intelligence maturity model: a systematic literature review', *PeerJ Computer Science* [Preprint]. Available at: <https://doi.org/10.7717/peerj-cs.661>.
- Raghad Baker Sadiq *et al.* (2021b) 'Artificial intelligence maturity model: a systematic literature review', *PeerJ Computer Science* [Preprint]. Available at: <https://doi.org/10.7717/peerj-cs.661>.
- Sulaiman, H., Cob, Z.C. and Ali, N. (2015) 'Big Data Maturity Model for Malaysian Zakat Institutions to Embark on Big Data Initiatives', in J. Zain *et al.* (eds) *2015 4TH INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING AND COMPUTER SYSTEMS (ICSECS)*. Univ Malaysia Pahang, Fac Comp Syst & Software Engn; IEEE, pp. 61–66.
- Treviño, G.O. and Gamboa, F.J.C. (2014) 'Intelligence capital: a capability maturity model for a software development centre', *Knowledge Management Research & Practice*, 12(3), pp. 289–296. Available at: <https://doi.org/10.1057/kmrp.2014.5>.
- 'Using the project management maturity model; strategic planning for project management, 2d ed.' (2005) *Reference and Research Book News*, 20(3). Available at: <http://0-search.proquest.com.pugwash.lib.warwick.ac.uk/trade-journals/using-project-management-maturity-model-strategic/docview/199681107/se-2?accountid=14888>.
- Vesset, D. *et al.* (2015) 'IDC MaturityScape: Big Data and Analytics 2.0', p. 15.
- Zitoun, C. *et al.* (2021) 'DMMM: Data Management Maturity Model', in *2021 International Conference on Advanced Enterprise Information System (AEIS). 2021 International Conference on Advanced Enterprise Information System (AEIS)*, pp. 33–39. Available at: <https://doi.org/10.1109/AEIS53850.2021.00013>.

Neuromarketing: Evaluating Consumer Emotions and Preferences to Improve Business Marketing Management

Ian Mei Zeng and João Alexandre Lobo Marques

University of Saint Joseph, Macau, China

zeng.ian.mei@usj.edu.mo

alexandre.lobo@usj.edu.mo

Abstract: The invention of neuroscience has benefited medical practitioners and businesses in improving their management and leadership. Neuromarketing, a field that combines neuroscience and marketing, helps businesses understand consumer behaviour and how they respond to advertising stimuli. This study aims to investigate the consumer purchase intention and preferences to improve the marketing management of the brand, based on neuroscientific tools such as emotional arousal using Galvanic Skin Response (GSR) sensors, eye-tracking, and emotion analysis through facial expressions classification. The stimuli for the experiment are two advertisement videos from the Macau tea brand “Guanding Teahouse” followed by a survey. The experiment was conducted on 40 participants. 76.2% of participants that chose the same product in the first survey responded with the same choice of products in the second survey. The GSR peaks in video ad 1 measured a total of 60. On the other hand, video ad 2 counted a total of 55 GSR peaks. The emotions in ad1 and ad2 have similar responses, with an attention percentage of 76%. The results showed that ad1 has a higher engagement time of 11.1% and ad2 has 9.6%, but only 19 of the respondent’s conducted engagement in video ad1, and 31 showed engagement in video ad2. The results demonstrated that although ad 1 has higher engagement rates, the respondents are more attracted to video ad 2. Therefore, ad2 has better marketing power than ad 1. Overall, this study bridges the gap of no previous research on measuring tea brand advertisements with the neuroscientific method. The results provide valuable insights for marketers to develop better advertisements and marketing campaigns and understand consumer preferences by personalising and targeting advertisements based on consumers' emotional responses and behaviour of consumers' purchase intentions. Future research could explore advertisements targeting different demographics.

Keywords: Neuromarketing, Consumer behaviour, Marketing management, Galvanic skin response, Facial Expression classification

1. Introduction

Marketing is essential for every business, contributing to the company's success. The simplest definition of marketing is "engaging customers and managing profitable customer relationships" (Kotler and Armstrong, 2018, p.28). Marketers must understand the customer's purchase intention to develop a better advertisement and marketing campaign to attract their target customers. As the core value of marketing satisfies customer needs, it is defined generally as a social and managerial process by which individuals and organisations obtain what they need and want through creating and exchanging value with others (Kotler and Armstrong, 2018). The definition is further introduced as the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society (AMA, 2017). To address this theory in practice, customers today are also creators of the brand, and creativity in the marketing industry is the main component of diversifying with competitors by involving customers' interest in their marketing campaigns (Bonchek and France, 2017). Accordingly, in today's digital world, businesses must target digital approaches to reach and engage customers online. Marketing 4.0 stated that moving from traditional marketing to digital marketing, value co-creation is critical in new product development, which allows customers the power to customise and personalise products and services to create superior value propositions (Kotler, Setiawan and Kartajaya, 2016). This paper uses the neuromarketing technique on Macau tea brand “Guanding Teahouse” advertisements to offer an empirical approach to social media advertisements' purchase intention and consumer behaviour. No previous study has investigated tea brand advertisements with the neuroscientific method. Therefore, this study contributes to this growing area of research by exploring the consumer's social media purchase intention and consumer behaviour to improve the brand's marketing management process. The overall structure of the study takes the form of five parts, including - literature review which discusses previous literatures on marketing, consumer purchase intention, consumer emotions and engagements, and neuromarketing; following with a methodology presenting the data and sample collection and experiment design; and the findings and discussions to address the results. Accordingly, the following research question is proposed:

RQ: How can neuromarketing help marketers to improve marketing management?

2. Literature Review

2.1 Consumer Purchase Intention

Consumer purchase intention refers to the consumer's willingness and intention to buy a particular product or service. It is crucial in predicting consumer behaviour and demand for new products (Chaiinkam et al., 2019). Consumer purchase intention is a multifaceted concept encompassing various values, including financial, functional, individual, and social (Chaiinkam et al., 2019). Moreover, consumer purchase intention is a subjective probability of buying behaviour formed through the cognitive process of product evaluation, influenced by external stimuli and conditions (He and Qu, 2018).

2.2 Emotion and Purchase Intention

Emotion plays a crucial role in shaping consumer purchase intention. Research has shown that emotions influence consumers' attitudes towards products or services and significantly impact their purchase intention (Anderlová and Pšurný, 2020). Emotions can be positive and negative and vary in intensity, influencing the consumer's decision-making process. Positive emotions, such as happiness, excitement, and trust, can increase purchase intention by creating a favourable attitude towards the advertised product or service (Fredrickson, 2001).

On the other hand, negative emotions, such as anger, fear, or disgust, can significantly decrease purchase intention as they create a negative attitude towards the product or service (Son, Nam and Diddi, 2022). Furthermore, emotions can mediate between other factors, such as perceived value and purchase intention. For example, research found that purchase intention positively correlates with trust, emotion and perceived value (Yang and Yin, 2018; Wang et al., 2019). Specifically, consumers' perception of the value they will gain from a product or service influences their purchase intention (Yang and Yin, 2018). Consumers evaluate a purchase's potential benefits and sacrifices and determine if it aligns with their needs and desires (Scridon et al., 2019).

Consumers' emotions can significantly impact their evaluation of a brand or product before purchasing (Junejo et al., 2022). They can influence how consumers perceive the value of a product, as positive emotions are associated with higher perceived value, and negative emotions are associated with lower perceived value. Moreover, emotions can drive consumers' satisfaction with their purchase and their likelihood of repurchasing the product or service (He et al., 2021).

2.3 Brand Marketing Management

Marketing management is a companywide taking which drives the company's vision, mission, and strategic planning within all the departments (Kotler et al., 2009). It is a process of planning, executing, and tracking an organisation's marketing strategy. This includes the marketing plan, campaigns and tactics used to create and meet the demand of target customers to drive profitability. Knowing the customers is the first step to developing a successful marketing strategy. Marketers should research the market demographics, needs, trends, and growth to create a sample persona in their target markets (Kotler et al., 2009).

Moreover, previous literature has defined marketing concepts at an organisation level. Figure 1 demonstrates the concepts of marketing defined by the level of social aggregation. The nature of marketing is perceived from three perspectives – The organisational system, the distribution system, and the social system (Sweeney, 1972). The Organisational system focuses on the extension, refinement and evaluation of technology; The distribution system focuses on the functions being performed by the system; And the social system focuses on the determinants, structure and performance of the process to perform exchange (Sweeney, 1972). According to Shee and Abratt (1989), businesses should build corporate image management by projecting the corporate personality in its identity. Therefore, it results from a positive corporate image from effective and successful marketing management of the brand.

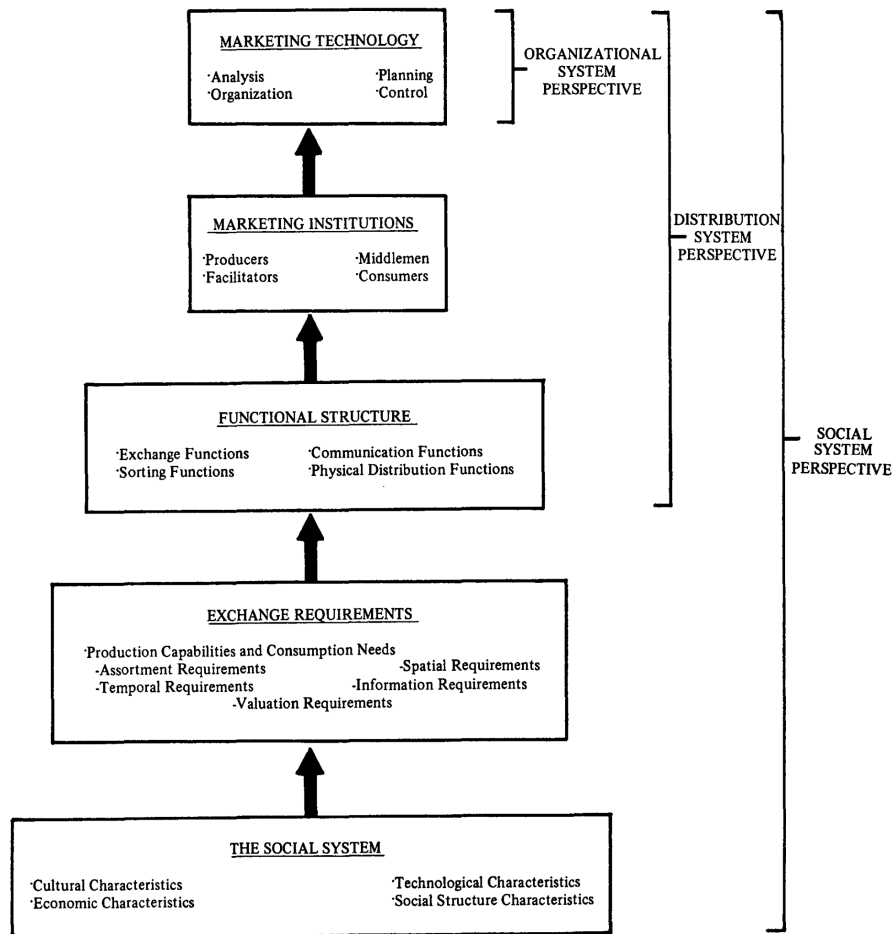


Figure 1: Perspectives on marketing defined by levels of social aggregation (Sweeney, 1972)

2.4 Customer Value and Engagement

Customer value is recognised as the core of the Business Model Canvas, which is the rationale of how an organisation creates, delivers, and captures value (Osterwalder and Pigneur, 2010). Moreover, customer value has also been a key determinant of customers' decision-making and evaluative judgments (Gallarza, Gil-Saura and Holbrook, 2011). Previous research has stated that customer value also influenced pre-purchase and post-purchase significance (Sweeney, Soutar and Johnson, 1999; Kleijnen, de Ruyter and Wetzels, 2007; Leroi-Werelds et al., 2014; Willems, Leroi-Werelds and Swinnen, 2016). Furthermore, Kotler and Armstrong (2018) demonstrated a five-step marketing process for creating and capturing customer value – understanding customer needs and wants; designing a customer value-drive marketing strategy; constructing an integrated marketing program that delivers superior value; engaging and building relationships with customers; and capturing value from customers to create profits and customer equity. Figure 2 illustrates a value co-creation model, demonstrating the provider (the firm) and customer sphere. In the joint sphere, resources integrate with the firm and the customer, consisting of skills and resources to co-create value (Grönroos and Voima, 2013; Leroi-Werelds et al., 2017). Indeed, co-creation involves customers and service companies collaborating to create service value and deliver desired customer experiences (Prahalad and Ramaswamy, 2004). Customer value co-creation behaviour refers to customers actively participating in the value-creation process through their involvement and citizenship behaviours (Yi and Gong, 2013; Shamim, Ghazali and Albinsson, 2016).

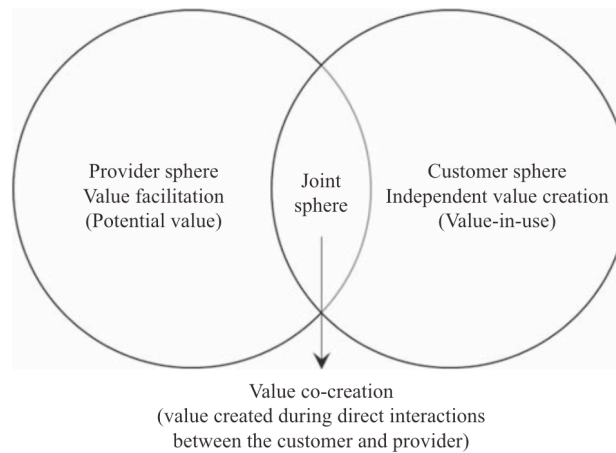


Figure 2: Value co-creation model (Grönroos and Voima, 2013)

On the other hand, customer engagement refers to the psychological state of customers when participating in the service experience interaction process (Brodie et al., 2011). It refers to how customers treat the service company and its personnel (So, King and Sparks, 2014). In addition, customer engagement promotes customer value co-creation behaviours (Merrilees, 2016; Zhang et al., 2017). Additionally, it is demonstrated as a multifaceted concept encompassing aspects of affection, cognition, and behaviour (Hollebeek, 2011). Moreover, it is described as customers' profound dedication and enthusiasm towards building relationships with a company. This is distinct from customer involvement, which centres on customers' interest in specific products or services (Abdul-Ghani, Hyde and Marshall, 2011). Furthermore, customer engagement can result in various forms of customer value, such as customer lifetime value, referral value, influencer value, and knowledge value, which are advantageous for companies (Kumar et al., 2010).

2.5 The Role of Consumer Emotions in Technological Shifts of Marketing

Customer emotion plays a great role in maintaining brand loyalty and providing customer experience. The appraisal theory of emotions defines what circumstances specific emotion induces (Roseman, 1991). In addition, the Mehrabian-Russell model, as shown in Figure 3, demonstrates external environmental factors that stimulate the customer's emotional status, including pleasure and arousal (Mehrabian and Russell, 1974).

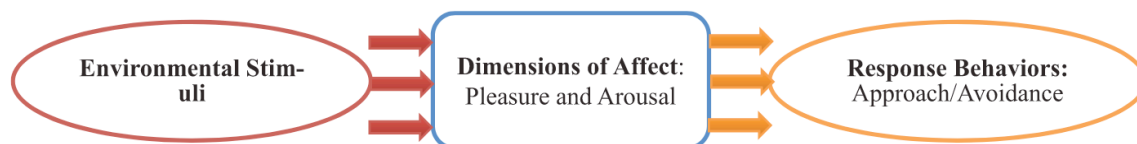


Figure 3: The Mehrabian-Russell model (Mehrabian and Russell, 1974)

Moreover, when customers have high satisfaction, it contributes to positive emotions; On the other hand, high customer expectations can result in negative emotions when the services are not delivered as expected (Price, Arnould and Deibler, 1995; Wood and Moreau, 2006). Hence, customer expectations and emotions are closely related (Haber, 1958). In recent research on customer emotions and experience, neuroscientific tools are used to measure the data better. For example, Verhulst et al. (2020) used electroencephalography (EEG) and galvanic skin response (GSR) to measure emotions in research about the dynamic nature of emotions during the customer experience. It is considered an emotional connection with a brand when customers' motivations and desires are fulfilled unconsciously (Magids, Zorfas and Leemon, 2015). Opportunities for growth driven by emotional connection can be found throughout the customer experience, extending beyond conventional brand positioning and advertising. Social media, for instance, can play a significant role in fostering emotional connections. A condiments brand, for instance, discovered that a substantial 60% of its customers who were affiliated with social networks (particularly followers on Facebook, Twitter, and Pinterest) displayed emotional connection, compared to only 21% of its overall customer base. By prioritising its social media presence, fostering an online customer community, and directing customers to its website for recipes and promotions, the brand experienced accelerated growth within a few months (Magids, Zorfas and Leemon, 2015).

2.6 Neuromarketing and Advertising Development

95% of people's decisions are subconscious, and only 5% are made consciously (Zaltman, 2003; Arendonk, Polderman and Smit, 2013). Indeed, traditional marketing tools only tried to understand the 5%, but neuromarketing tools can define 95% of people's decisions (Fisher, Chin and Klitzman, 2010). In the past, neuroscientific tools are expensive and time-consuming to use. Nevertheless, the technology advancement has allowed researchers to use it cheaper and faster than other marketing research methods. It can also provide marketers with information that cannot be obtained through conventional marketing research (Ariely and Berns, 2010). McClure et al. (2004) conducted one famous research on neuromarketing by experimenting with Pepsi and Coca-Cola to participants while undergoing brain scans using fMRI technology. Despite the nearly identical chemical composition of both beverages, individuals often exhibit strong subjective preferences for one over the other. McClure et al. (2004) conducted two tests: a blind test and a test where participants were aware of the drink they were consuming. The results varied between the two tests. In the blind test, most participants preferred Pepsi, whereas most participants favoured Coca-Cola in the test where they were aware of the drink.

Neuromarketing includes all behaviour research and behaviour-based strategies (Dooley, 2011). It uses biometric tools such as eye-tracking, Galvanic Skin Response (GSR) sensors, electroencephalography (EEG), and emotion analysis through facial expressions classification. The human brain possesses hidden information regarding genuine preferences, which can be leveraged to shape consumer behaviour. This potential outweighs the associated costs of employing neuromarketing tools (Hubert and Kenning, 2008; Ariely and Berns, 2010). Researchers have used neuromarketing to study online social media marketing to gain insight into consumers' preferences (Wang and Doong, 2017; Constantinescu et al., 2019), using tools like neurophysiological and biological processes to study the decision-making behaviour of different brands and labels (Meyerding and Mehlhose, 2020). By conducting neuromarketing studies within the realm of social media, companies can obtain valuable insights into how their communication endeavours are perceived by viewers in various aspects, including emotional engagement, memory retention, purchase intention, novelty, awareness, and attention (Sebastian, 2014).

3. Methodologies

3.1 Sampling

Convenient sampling was employed as the sampling method for this study, allowing for the efficient and prompt recruitment of available participants. The experiment consisted of 40 participants, aged between 21 and 49, comprising 22 males and 18 females. The gender distribution is illustrated in Figure 5, with males accounting for a larger proportion of 55%, while females represented 45% of the total participants. In addition, the sample was collected between December 2021 to November 2022.

The experiment occurred at the Laboratory of Applied Neuroscience in the FBL office. Prior to the experiment, each participant received informed consent. All participants were right-handed, possessed normal or corrected-to-normal vision, and had no psychological disorders.



Figure 3: Proportion of Male and Female participants.

3.2 Data Collection Method

The data collection process involved using neuroscientific tools, specifically eye-tracking (Tobii Pro Nano) and galvanic skin response (Shimmer GSR B2F7) with the iMotions software. These tools enabled the measurement

of participants' emotional responses and visual attention when exposed to the marketing stimuli in the project. The experiment was conducted using iMotions software version 8.2 on a 12-inch display of a Dell Laptop equipped with an i7 processor, 16GB RAM, and a GPU and running on the Microsoft Windows 10 operating system.

The collected data encompassed gaze and fixation results from designated Areas of Interest (AOI), heart rate measurements, Affectiva AFFDEX for facial analysis, and FEA (emotions). Electrodes were placed on the left wrist and the distal phalanx of the index and middle fingers of the participant's non-dominant hand to capture heart rate and galvanic skin response (GSR) data, respectively..

3.3 Stimuli Selection

The stimuli are divided into two parts – Video 1 and Video 2, each consisting of a set of Instagram stories (see Table 1). The stimuli are designed to capture the attention of the participant's area of interest (AOI) when reacting to different ads and investigating their consumer behaviour.

Table 1: Stimuli Description for Experiment

Instagram Ads	Descriptions	Type of Ad	Duration
Marketing Model for Video 1			
Video 1	Step-to-step tea tutorial using the tea filter	Video	53s
Instagram Stories Ad 1	Instagram Story featuring the Narcissus Tea Giftbox	Photo	6s
Instagram Stories Ad 2	Instagram Story featuring Cassia tea with the tagline "+10 MOP get a tea filter with any purchase."	Photo	6s
Instagram Stories Ad 3	Instagram Story Featuring the Big Red Robe Tea	Photo	6s
Survey 1	A survey to ask the participants which tea they would like to try	Survey	N/A
Marketing Model for Video 2			
Video 2	Valentine's Day-themed video showing the model and the Big Red Robe Giftbox	Video	42s
Instagram Stories Ad 1	Instagram Story Featuring Oolong Tea Set with price	Photo	6s
Instagram Stories Ad 2	Instagram Story Describing the benefits of oolong tea	Photo	6s
Instagram Stories Ad 3	Instagram Story featuring Big Red Robe Giftbox with price	Photo	6s
Survey 2	A survey to ask the participants which tea set they would like to buy as a gift	Survey	N/A
Ending Ad	An Instagram story featuring the brand slogan "Enjoy a nice cup of tea."	Photo	6s

3.4 Stimuli Strategy

As depicted in Table 1, each stimulus was carefully crafted to elicit specific reactions from the participants towards different advertisements. Video 1 primarily focused on showcasing the products and providing a tutorial on tea consumption. Additionally, three targeted Instagram stories were employed for each product, aiming to enhance comprehension of the product and increase brand awareness. A subsequent survey measured participants' level of interest in each tea after viewing Video 1 and the accompanying Instagram stories.

On the other hand, Video 2 employed a themed promotion centred around Valentine's Day, intending to evoke positive emotions and stimulate purchase intention. The advertisement featured a model's face to gauge audience attention towards the product. 3 Instagram stories followed this. To assess the appeal of the ads, the survey offered participants a choice between an oolong tea set or a big red robe gift box.

Towards the experiment's conclusion, an Instagram story incorporating the brand slogan was employed to elevate brand awareness for Guanding Teahouse further.

3.5 Data Analysis Method

The data is analysed in the iMotions software. GSR peaks, emotions variables and engagement time are selected to measure the advertisement's effectiveness. GSR peaks provide information about emotional arousal in response to stimuli. Using GSR peaks, studies of emotional arousal can include quantitative data and engagement time and measure the rate of emotion that can attract participants.

4. Findings and Discussions (Include reviewed literature)

This research uses neuroscientific tools to measure customers' emotions to gain insight into customers' true preferences. The results demonstrated in Table 2 show that Video 1 registered 60 GSR peaks, while Video 2 recorded 55 GSR peaks, as indicated by the data. Both advertisements elicited similar emotional responses, with an attention percentage of 76%. The findings revealed that Video 1 had a higher engagement time of 11.1%, whereas Video 2 had a slightly less engagement time of 9.6%. However, it is noteworthy that only 19 respondents demonstrated engagement with video 1, whereas 31 respondents exhibited engagement with video 2. These results indicate that although Video 1 showed higher engagement rates, respondents were more attracted to Video 2. Consequently, Video 2 possesses stronger marketing efficacy compared to Video 1. Moreover, 76% of the participants that chose the same product in the first survey also responded with the same choice of products in the second survey.

Table 2: Experimental results of the social media advertisements

	GSR Peaks	Emotion	Engagement Time	No. of Participants Engaged (Engagement Rate)
Video 1	60	76%	11.1%	19
Video 2	55	76%	9.6%	31

The results show that customers are attracted to advertisements with human features. The engagement rate of Video 2 has demonstrated that an advertisement with the model can attract more emotional responses and result in engagement. It is proposed that engagement rate related to emotion response. For which previous studies shown that higher engagement rate contributes to building relationships with customers, and emotion arousal can increase consumer's purchase intention (Abdul-Ghani, Hyde and Marshall, 2011; He et al., 2021). The relationship between GSR peaks and emotion cannot be defined in the study because the GSR peaks in both Videos are similar. Moreover, the continued choices of 76.2% of participants indicated that Neuroscientific tools are effective marketing research tools, and small samples can be accurate and representative of results.

5. Conclusions

Marketing Management is crucial to each brand. This paper aims to find consumers' purchase intention and preferences to improve the marketing management for brands. Emotion, GSR peaks and engagement time are the main influencers for advertising. This research used the stimuli of the tea brand to test the advertising effectiveness on the social media platform – Instagram. To answer the research question:

RQ: How can neuromarketing help marketers to improve marketing management?

The relationship between emotion and engagement time has shown that emotional stimulation in advertisements can increase the engagement of the ad. Moreover, showing human features can increase emotion and engagement. Therefore, it is advised to use human features to improve the emotion and engagement rate of the ads.

This research fills the gap of prior studies that have not employed neuroscientific methods to measure the effectiveness of tea brand advertisements. The findings offer valuable knowledge for marketers to enhance their advertisements and marketing campaigns and gain a deeper understanding of consumer preferences. Marketers can personalise and target their efforts more effectively by tailoring and aiming advertisements at consumers' emotional responses and purchasing intentions. Subsequent studies could investigate advertisements targeting diverse demographic groups. There are several limitations for this research. First, the samples are convenient sampling which did not have a balance age range. Second, the stimuli are not highly

differentiated from each other, future research should use a more diverse set of stimuli for a more significant result of GSR peaks and emotions. As stated in previous literatures, 95% of people's decisions are made subconsciously, future study should consider research on effects of human features on emotions and purchase decision.

References

- Abdul-Ghani, E., Hyde, K.F. and Marshall, R. (2011) 'Emic and etic interpretations of engagement with a consumer-to-consumer online auction site', *Journal of Business Research*, 64(10), pp. 1060–1066.
- AMA (2017) *Definitions of Marketing*, American Marketing Association. [online], AMA, <https://www.ama.org/the-definition-of-marketing-what-is-marketing>.
- Anderlová, D. and Pšurný, M. (2020) 'Exploring the Importance of Emotions Within Consumer Behaviour on the Czech Luxury Cosmetic Market', *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 68(2), pp. 363–372.
- Arendonk, E. van, Polderman, A. and Smit, K.R. (2013) *Neuromarketing: maximale impact met marketing en communicatie*. Academic Service.
- Ariely, D. and Berns, G.S. (2010) 'Neuromarketing: The hope and hype of neuroimaging in business', *Nature Reviews Neuroscience*, 11(4), pp. 284–292.
- Bonchek, M. and France, C. (2017) 'What Creativity in Marketing Looks Like Today', *Harvard Business Review*, 22 March.
- Brodie, R.J. et al. (2011) 'Customer Engagement: Conceptual Domain, Fundamental Propositions, and Implications for Research', *Journal of Service Research*, 14(3), pp. 252–271.
- Chaiinkam, T. et al. (2019) 'Chinese Students and Customers Purchasing Demands: A 10-year Systematic Review on Luxury Education', in: *3rd International Conference on Education Innovation (ICEI 2019)*, Atlantis Press, pp. 379–383.
- Constantinescu, M. et al. (2019) 'Attitude Evaluation on Using the Neuromarketing Approach in Social Media: Matching Company's Purposes and Consumer's Benefits for Sustainable Business Growth', *Sustainability*, 11(24), p. 7094.
- Dooley, R. (2011) *Brainfluence: 100 Ways to Persuade and Convince Consumers with Neuromarketing*. 1st edition. Hoboken, N.J.: Wiley.
- Fisher, C.E., Chin, L. and Klitzman, R. (2010) 'Defining neuromarketing: Practices and professional challenges', *Harvard Review of Psychiatry*, 18(4), pp. 230–237.
- Fredrickson, B.L. (2001) 'The Role of Positive Emotions in Positive Psychology', *The American psychologist*, 56(3), pp. 218–226.
- Gallarza, M.G., Gil-Saura, I. and Holbrook, M.B. (2011) 'The value of value: Further excursions on the meaning and role of customer value', *Journal of Consumer Behaviour*, 10(4), pp. 179–191.
- Grönroos, C. and Voima, P. (2013) 'Critical service logic: making sense of value creation and co-creation', *Journal of the Academy of Marketing Science*, 41(2), pp. 133–150.
- Haber, R.N. (1958) 'Discrepancy from adaptation level as a source of affect', *Journal of Experimental Psychology*, 56(4), pp. 370–375.
- He, J. et al. (2021) 'The Effect of Mobile Marketing Design on Consumer Mobile Shopping', *Complexity*, 2021, p. e5571506.
- He, Q. and Qu, H. (2018) 'The Impact of Advertising Appeals on Purchase Intention in Social Media Environment—Analysis of Intermediary Effect Based on Brand Attitude', *Journal of Business Administration Research*, 7(2), p. 17.
- Hollebeek, L. (2011) 'Exploring customer brand engagement: definition and themes', *Journal of Strategic Marketing*, 19(7), pp. 555–573.
- Hubert, M. and Kenning, P. (2008) 'A current overview of consumer neuroscience', *Journal of Consumer Behaviour*, 7(4–5), pp. 272–292.
- Junejo, I.U. et al. (2022) 'The Mediating Role of Brand Attitude for Purchase Intention: Empirical Evidence from Fast Food Industry in Pakistan', *Etikonomi*, 21(1), pp. 103–112.
- Kleijnen, M., de Ruyter, K. and Wetzels, M. (2007) 'An assessment of value creation in mobile service delivery and the moderating role of time consciousness', *Journal of Retailing*, 83(1), pp. 33–46.
- Kotler, P. et al. (2009) *Marketing Management: An Asian Perspective*. 5th edn. Singapore: Pearson.
- Kotler, P., Setiawan, I. and Kartajaya, H. (2016) *Marketing 4.0: Moving from Traditional to Digital*. Canada: Wiley.
- Kotler, P.T. and Armstrong, G. (2018) *Kotler, Principles of Marketing, Global Edition*. 17th edn. United Kingdom: Pearson, pp. 28.
- Kumar, V. et al. (2010) 'Undervalued or Overvalued Customers: Capturing Total Customer Engagement Value', *Journal of Service Research*, 13(3), pp. 297–310.
- Leroi-Werelds, S. et al. (2014) 'Assessing the value of commonly used methods for measuring customer value: a multi-setting empirical study', *Journal of the Academy of Marketing Science*, 42(4), pp. 430–451.
- Leroi-Werelds, S. et al. (2017) 'Does communicating the customer's resource integrating role improve or diminish value proposition effectiveness?', *Journal of Service Management*, 28(4), pp. 618–639.
- Magids, S., Zorfas, A. and Leemon, D. (2015) 'The New Science of Customer Emotions: A better way to drive growth and profitability', *Harvard Business Review*.
- McClure, S.M. et al. (2004) 'Neural Correlates of Behavioral Preference for Culturally Familiar Drinks', *Neuron*, 44, pp. 379–387.
- Mehrabian, A. and Russell, J.A. (1974) *An approach to environmental psychology*. Cambridge, MA, US: The MIT Press (An approach to environmental psychology), pp. 266.

- Merrilees, B. (2016) 'Interactive brand experience pathways to customer-brand engagement and value co-creation', *Journal of Product & Brand Management*, 25, pp. 402–408.
- Meyerding, S.G.H. and Mehlhose, C.M. (2020) 'Can neuromarketing add value to the traditional marketing research? An exemplary experiment with functional near-infrared spectroscopy (fNIRS)', *Journal of Business Research*, 107, pp. 172–185.
- Osterwalder, A. and Pigneur, Y. (2010) *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. First Edition. New York: John Wiley and Sons.
- Prahalad, C.K. and Ramaswamy, V. (2004) 'Co-creating unique value with customers', *Strategy & Leadership*, 32(3), pp. 4–9.
- Price, L.L., Arnould, E.J. and Deibler, S.L. (1995) 'Consumers' emotional responses to service encounters: the influence of the service provider', *International Journal of Service Industry Management*, 6(3), pp. 34–63.
- Roseman, I.J. (1991) 'Appraisal determinants of discrete emotions', *Cognition and Emotion*, 5(3), pp. 161–200.
- Scridon, M.A. et al. (2019) 'Risk and perceived value: antecedents of customer satisfaction and loyalty in a sustainable business model', *Economic Research-Ekonomska Istraživanja*, 32(1), pp. 909–924.
- Sebastian, V. (2014) 'Neuromarketing and Evaluation of Cognitive and Emotional Responses of Consumers to Marketing Stimuli.', *Procedia - Social and Behavioral Sciences*, 127, pp. 753–757.
- Shamim, A., Ghazali, Z. and Albinsson, P.A. (2016) 'An integrated model of corporate brand experience and customer value co-creation behaviour', *International Journal of Retail & Distribution Management*, 44(2), pp. 139–158.
- Shee, P.S.B. and Abratt, R. (1989) 'A new approach to the corporate image management process', *Journal of Marketing Management*, 5(1), pp. 63–76.
- So, K.K.F., King, C. and Sparks, B. (2014) 'Customer Engagement With Tourism Brands: Scale Development and Validation', *Journal of Hospitality & Tourism Research*, 38(3), pp. 304–329.
- Son, J., Nam, C. and Diddi, S. (2022) 'Emotion or Information: What Makes Consumers Communicate about Sustainable Apparel Products on Social Media?', *Sustainability*, 14(5), p. 2849.
- Sweeney, D.J. (1972) 'Marketing: Management Technology or Social Process?', *Journal of Marketing*, 36(4), pp. 3–10.
- Sweeney, J.C., Soutar, G.N. and Johnson, L.W. (1999) 'The role of perceived risk in the quality-value relationship: A study in a retail environment', *Journal of Retailing*, 75(1), pp. 77–105.
- Verhulst, N. et al. (2020) 'A neurophysiological exploration of the dynamic nature of emotions during the customer experience', *Journal of Retailing and Consumer Services*, 57, p. 102217.
- Wang, H. and Doong, H. (2017) 'An exploratory study on consumers' attention towards social media advertising: An electroencephalography approach'.
- Wang, M.-Y. et al. (2019) 'Effect of Emotion, Expectation, and Privacy on Purchase Intention in WeChat Health Product Consumption: The Mediating Role of Trust', *International Journal of Environmental Research and Public Health*, 16, p. 3861.
- Willems, K., Leroi-Werelds, S. and Swinnen, G. (2016) 'The impact of customer value types on customer outcomes for different retail formats', *Journal of Service Management*, 27(4), pp. 591–618.
- Wood, S.L. and Moreau, C.P. (2006) 'From Fear to Loathing? How Emotion Influences the Evaluation and Early Use of Innovations', *Journal of Marketing*, 70(3), pp. 44–57.
- Yang, L. and Yin, C. (2018) 'Influence of Product Plot Connection of Product Placement on Purchase Intention', in: *2018 2nd International Conference on Education Science and Economic Management (ICESEM 2018)*, Atlantis Press, pp. 107–111.
- Yi, Y. and Gong, T. (2013) 'Customer value co-creation behavior: Scale development and validation', *Journal of Business Research*, 66(9), pp. 1279–1284.
- Zaltman, G. (2003) *How Customers Think: Essential Insights into the Mind of the Market*. Harvard Business School Press.
- Zhang, M. et al. (2017) 'Influence of customer engagement with company social networks on stickiness: Mediating effect of customer value creation', *International Journal of Information Management*, 37(3), pp. 229–240.

PhD Research Papers

Assessing the Impacts of a Firm's Reputation on the Financial Performance of SMEs: Evidence From Selected Literature

Charles Randy Afful

Department of Business Administration, Faculty of Economics and Management (FAME), Tomas Bata University in Zlín, Czech Republic

afful@utb.cz

Abstract: Financial performance has been the beckon of growth of most SMEs worldwide as such there is a growing need to improve small and medium-sized enterprises' (SMEs) reputation to gain more financially and to be highly competitive. For this reason, this study reviewed 25 articles referenced in Web of Science and Scopus journals using a systematic literature review to explain the impacts of reputation on SME firms' financial performance. The author identified differences in theoretical models in the articles and conceptualize them summarily based on the outcome. Articles were selected from 2018 to 2022. The resultant effect of this review asserts that business reputation significantly influences SMEs' financial performance, and it is mediated by leadership. However, profitability reduces if SME leaders concentrate more on investment in reputation as acclaimed by some CEOs. This research will leverage more studies in the field of SME performance and reputational management factors. It will give guidance to future researchers thematically.

Keywords: Corporate reputation, Financial performance, SMEs, Leadership, Corporate social responsibility, Intangible Asset Management, Management, Systematic review

1. Introduction

The Significant objective of shareholders in businesses is to make a substantial profit from their investments as such structures and strategic decisions are geared toward achieving this pedestal acumen. The reputation of a business could affect the business positively or pejoratively depending on the type of reputation the business bears in the mindset of the stakeholders. This study summarizes 25 articles in high-impact journals acknowledged in the Web of Science (WOS) and ABS. The growing innovations in communication technologies have changed the way business activities are performed due to cultural, ideological, and responses to crises (Collings, et al., 2021; Collings et al., 2021; Cai et al., 2022), as such there is a need to improve the images of firms. Business reputation is an intrinsic intangible strategic asset and a source of competitive advantage that enhances a firm's image (Hall & Andriani, 2000) e (Balmer & Greyser, 2006).

The importance of reputation to SME businesses' financial performance draws inspiration from several research in the management arena. Spanning from the improved brand asset, customers adorability of the organization, the ability to attract skilled employees and investment, and reduced financial cost. Small and medium-sized enterprises (SMEs) are major contributors to employment and form a significant part of most economies' development partners (EDP) (Pesotskaya, et al., 2021).

The study aims to improve the literature on reputation and fill the inadequate research gap in the SME segment. According to the SDG goals, SMEs play a critical role in the elimination of poverty and the provision of innovative platforms for growth. Although some of these firms suffer from a lack of capital, low productivity, decreased profit levels, and easily collapse, their cumulative benefits to economies are enormous as such the need for relevant research in the field. The outcomes of corporate reputation include attracting customers, employees, and investors (Pérez-Cornejo et al., (2022)

Business Reputation is conceptualized by two main proponents, namely: Perceptive dilemma which is stakeholders' perception about their company or firm; and Reality — the verity of a firm's policies, practices, procedures, systems, and performance, (HB Schultz and A Werner, n.d).

This study aims to assess the impact of business reputation on the financial performance of firms using a systematic literature review.

Empirical reviews over the years focused on organizational performance, corporate social responsibility, and firms' performance. For instance, (Ye, C., Song, X., & Liang, Y., 2022), studied reputation and CSR, ESG, on performance. Additionally, other reviews performance at the microeconomic level, explaining the relationship with other economic factors. However, this study seeks to compile and review the literature on the reputation of SMEs and its impacts on firm financial performance. Corporate recognition is an impartial variable that reflects the aggregated view of stakeholders' character multidimensional checks of a firm. These assessments are primarily based on perceptions of the organizations beyond movements and prospects, in comparison to

competitors (Miller, S. R., Eden, L., & Li, D. , 2020). Because of its substantial relevance for enterprise achievement, corporations need to frequently display their popularity as part of a recognition management system (Baumgartner, et al., 2022). The literature overview by (Schöggel, et al, 2023)) attested that firms' popularity is the cumulative imaginary perception of stakeholders about a company on diverse variables.

Corporate Reputation (CR) is an intangible asset that has the propensity to create cost (Walker, K. and Dyck, B., , 2014). The extant definition agrees that CR displays collective impressions held about a corporation via individuals of a social group, so embodies an internal dimension and an external, summarizing the aggregated perceptions of organization activities by using stakeholders as disclosed by some firms' simplest decided variables and their recognition creating information asymmetry. However injurious ones inclined to negatively affect SMEs performance are stored as secret.

Zhan, Shan, and Chang (2020) emphasized that CSR became tested for its reputational influence using statistics from the Global Reporting Bureau. Tailored agency concepts were used to explain the principles of popularity. Some of the studies mediated CSR with recognition considering latent literature had identified the relationship. Gardberg et al., (2019) postulated that corporate reputation for company social performance (CSP) is superior to several fantastic organizational results including elegance to challenging work markets and favourable product impressions with the aid of consumers, inter alia (Gangi, et al., 2020).

Also, the financial performance of SMEs has been explained by various researchers including Anagnostopoulou et al., (2019) asserted that the overall performance variables as the provider of excellence, the ratio of capital, and sales. The performance of an organization might be social, environmental, or economic performance. Singh, K., & Misra, M, (2021), stated that various research has attempted to define performance in phrases of financial or non-economic determinants to be factors of organizational performance (Waggoner, et al.,(1999)

Financial performance generally has been assessed through signs in conjunction with income boom, tracing back on funding (ROI), on asset (ROA), profits price, return on sales, and income constant with proportion (EPS), whereas non-economic basic overall performance has been considered in phrases of product extraordinary, overall pleasant management (TQM), marketing effectiveness. In all, there has been a fragmentation of research on the theme, while most of the research has focused on large corporations or firms' others mainly researched SMEs. This study seeks to reorganize the studies on reputation and business performance with much emphasis on SMEs' finances. Despite the influence of reputable agencies' ratings on corporations, SMEs are neglected in terms of the ratings and some of their ratings are not in tandem with global reality happenings, making investment decisions exceedingly difficult.

The novelty of this study entails addressing the research gap on the reputation and performance of SMEs in the aftermath of the COVID-19 pandemic. The research outline consists of the introduction, the theoretical review, the literature review, the abstract summary of the 25 articles, the gaps, the conclusion, the discussion, the impacts of the study, and the references.

2. Review of Theory

This section addresses some theories grounded in the reviews of the 25 articles and their relevance to the theme under research.

2.1 Signaling Theory

Some of the researchers developed their literature and constructed around this idea. Drawing on signalling theory, these principal indicators permit stakeholders to draw inferences about the employer's abilities, strategic traits, and potential to create a fee for them (Basdeo et al. 2006; (Baxter, 1999); (Rindova, V.P. and Fombrun, C.J., 1999.). This posits that Businesses need to purposely develop a reputational plan and speak these records to lessen statistics asymmetry. The reputation of an organization is stimulated with the aid of its picture, merchandise, and service extraordinary, personnel. This theory affirms that most firms are protective of information that could injure their reputation and may engage in public relational practices to only give information that can increase their market share. Hence the need for the authorized agencies to monitor and discuss these firms' improvement measures and disclose them to the stakeholders.

2.2 Resource-Based View Theory

Eight articles dwelled on the resource-based view theory to expatiate their research concept as a useful resource perspective, the share of resources, costs, and dangers are essential motives for cooperation among corporations. In this manner, cooperation facilitates organizational mastering and admission to innovation and

new technologies (Glaister, K.W. and Buckley, P.J., 1996) (Stuart, 1998); (Todeva, E. and Knoke, D., 2005). However, Danik, L. and Lewandowska, M., (2013) stressed that the reasons for cooperating are dynamic, which means they can change over time, because of adjustments in the company and even in the cooperation itself. (Zhang, L., Shan, Y. G., & Chang, M., 2021). Resource-based view acknowledges Reputation as an intangible asset of firms that need to be invested in to appraise its value to stakeholders. This asset is imitable rare and difficult to copy for this reason must be guided to prevent its devaluation.

2.3 Stakeholder Theory

The theory is useful for explaining why firms determine to put into practice socially accountable management, consisting of the advertising of social development in the nearby network, the safety of disadvantaged organizations, improvement of people's exertions conditions, or commercialization of ecological services and products. According to this concept, negative actions in the environment such as polluting the surroundings or abusing employees have an unbelievably adverse effect on stakeholders' belief in the organization (Freeman, 1984). This is explained using Porter's theory. who said that corporations and society supplement each other and must act jointly. Companies must therefore make decisions associated with the formula and implementation of CSR tasks in an energetic and continuous verbal exchange between the organization and its exclusive hobby companies (Miller, S. R., Eden, L., & Li, D. , 2020)

2.4 The Modulation Relationships

The reputation and firm financial performance-driven models extracted from the 25 articles give the relationships and the conformity of the variables. In the modulation variables in Figure 1 above, there are distinctions on key confirmatory variables, some introduce other factors like leadership and CSR to mediate the variables, and others are relational variables indicating the type of relation either significant or positive in the hypothesis. Some of the studies hypothesize a positive relationship between the reputation and financial performance of the firm. In all the articles, the reputation effect on the SMEs was recognized however whilst some were on financial performance, others were on organizational performance, and employee performance, respectively. The study by Zhang, Yuan George Shan, and Millicent Chang (2020) contended that CSR disclosure firm performance, and reputation have positive impacts on firm performance and reputation.

The multidimensional models in the articles explain that reputation impacts differently under some cultural factors. What is highly reputable culturally in one context may differ from others, especially in terms of fashion, use of emojis, and sign and brand names. whereas some value digital innovations competition overs value CSR and personnel integrity.

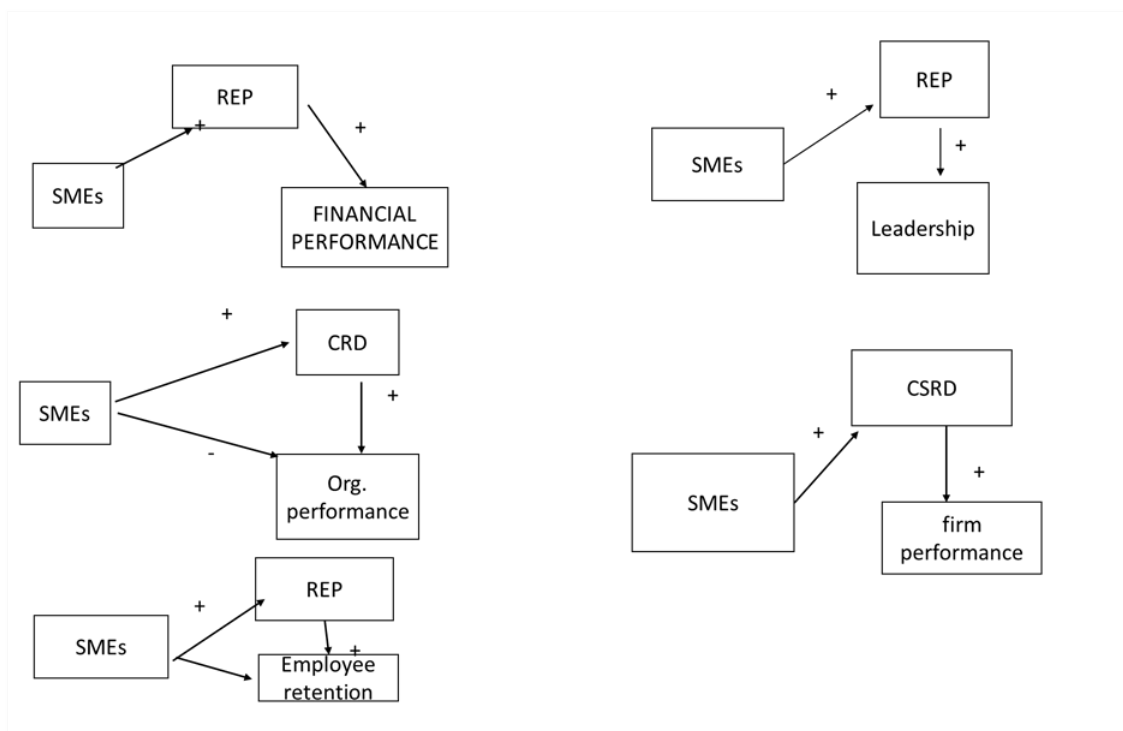


Figure 1: Thematic concept: Source: Own source

3. Research Methods

This section discusses the method used and the result. A systematic literature review qualitative research refereed in various international journals with high-impact factors in the fields of business, Management, Industrial relations, Organizational behaviour, and finance, was undertaken by the author to select the relevant topic under review. The journals included the Journal of Business Research (JBR), Journal of Business Ethics, Business Strategy and Environment, Annals of Tourism Research, and Corporate Review. Journal publications from 2018 to 2022 were selected from both Webs of Science (WoS) and Scopus in ABS ranked and used. The choice of the period 2018, was to understand the research dynamics on the theme before covid 19 and post covid, to avoid biases and to give a cogent overview of the theme. The initial search using the theme outcome was over 1,700 articles under Google Scholar but refined with other variables and WOS used. That is, firstly Reputation and performance of firms searched, then secondly Reputation and performance of SMEs, and thirdly impacts of reputation on SMEs performance from 2018 to 2022. The article search results were coded thematically and tabulated in Table 3. Figure 2 below outlines the search processes which were deployed. The thematic search on variables was used for the initial search in Google Scholar, then later in the Web of Science. The search outcomes have been captured in Figure 2. Results of the 25 articles reported that 23 recorded articles reported about reputation representing 92%. Also 32 % of the articles captured performance as a variable.

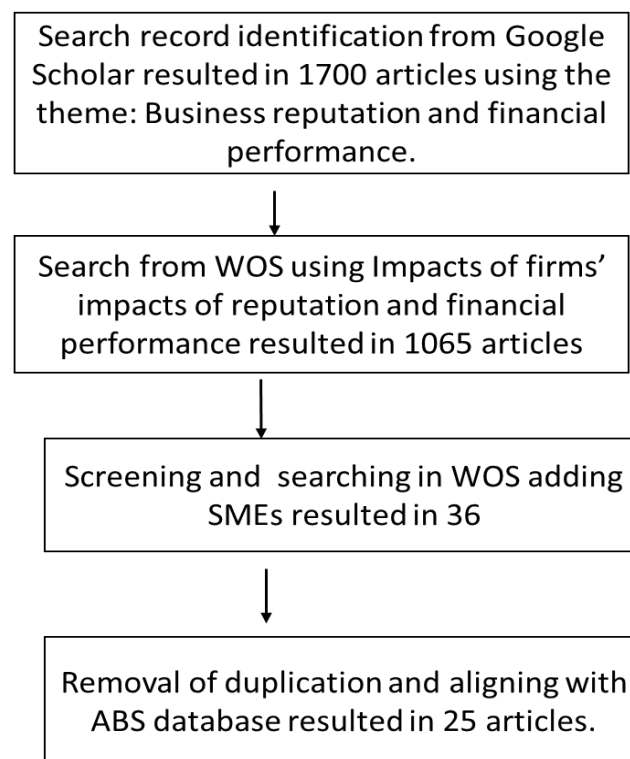


Figure 2: Article selection process

For a particular article to be included in the review, the study had to meet all the stated criteria. Firstly, it should navigate the impacts of business reputation on performance (financial or organizational). Secondly, it must foretell the significant impact of the research findings of the empirical study, thirdly the study must report on the relationship between reputation and performance or any of the related variables in business management and finally meets the key theme of the study. The literature search resulted in 25 articles and the author coded each article independently based on the theme, purpose, method, findings, and limitations. The author elaborated on the concept of the 25 studies graphically. Details of the purposefully sampled articles are recorded in the article review section.

3.1 Results

Table 2 captures the summary of the various journals and their impact factor from which the articles were sampled.

Table 2: Summary of the various journals

Journals	ABS Ranking/WOS	Location	Frequency
Journal of Business Research	3	Scopus & Web of Science	6
Journal of Business Ethics	3	Scopus & Web of Science	6
Journal of Corporate Social responsibility and environmental management	1	Scopus & Web of Science	1
Annals of Tourism Research.	4	Scopus & Web of Science	1
Business and Economics Research Review	3	Scopus & Web of Science	1
Corporate Reputation Review	1	Scopus	5
Employee Relations	2	Scopus & Web of Science	1
Interdisciplinary Description of Complex Systems: INDECS,	Q3	Web of Science	1
Journal of Intellectual Capital	2	Scopus & Web of Science	1
sustainable development	Q1	Web of Science	1
Entrepreneurship and sustainability issues	Q3	Web of Science	1

Table 3: Summary of Articles

	Date of Publication	Authors	Theme
1	2022	Rosamartina, S., Giustina, S. and Angeloantonio, R., 2022.	Digital reputation and firm performance: The moderating role of firm orientation towards sustainable development goals (SDGs)
2	2020	Baumgartner, K.T., Ernst, C.A. and Fischer, T.M., 2020	How Corporate Reputation Disclosures Affect Stakeholders' Behavioural Intentions: Mediating Mechanisms of Perceived Organizational Performance and Corporate Reputation
3	2021	Varma, T.M., 2021.	Topic: Responsible Leadership and Reputation Management During a Crisis: The Cases of Delta and United Airlines
4	2020	Ali, I., Ali, M., Grigore, G., Molesworth, M. and Jin, Z., 2020.	The moderating role of corporate reputation and employee-company identification on the work-related outcomes of job insecurity resulting from workforce localization policies.
5	2020	Pham, H.S.T. and Tran, H.T., 2020.	CSR disclosure and firm performance: The mediating role of corporate reputation and moderating role of CEO integrity
6	2020	Zhang, L., Shan, Y.G. and Chang, M., 2021.	Can CSR Disclosure Protect Firm Reputation During Financial Restatements?
7	2019	Almeida, M.D.G.M.C. and Coelho, A.F.M., 2019.	The Antecedents of Corporate Reputation and Image and Their Impacts on Employee Commitment and Performance: The Moderating Role of CSR.

	Date of Publication	Authors	Theme
8	2020	Moghaddam, K., Weber, T., Seifzadeh, P. and Azarpanah, S., 2021	Internal Reputation of the Firm: CEO Retention and Firm Market Performance.
9	2020	Dupont, Q. and Karpoff, J.M., 2020.	The Trust Triangle: Laws, Reputation, and Culture in Empirical Finance Research
10	2022	Liu, Y.F., Li, H. and Liang, S., 2022.	Any reputation is a good reputation: influence of investor-perceived reputation in restructuring on hospitality firm performance.
11	2020	Javed, M., Rashid, M.A., Hussain, G. and Ali, H.Y., 2020.	The effects of corporate social responsibility on corporate reputation and firm financial performance: The moderating role of responsible leadership
12	2021	Lamotte, O., Chalençon, L., Mayrhofer, U. and Colovic, A., 2021	Intangible resources and cross-border acquisition decisions: The impact of reputation and the moderating effect of experiential knowledge
13	2023	Martínez-León, I.M., Olmedo-Cifuentes, I. and Davies, G., 2023.	The Virtuous Circle of Internal Corporate Reputation and Financial Performance
14	2018	Axjonow, A., Ernstberger, J. and Pott, C., 2018.	The Impact of Corporate Social Responsibility Disclosure on Corporate Reputation: A Non-professional Stakeholder Perspective
15	2021	Ardito, L., Raby, S., Albino, V. and Bertoldi, B., 2021.	The duality of digital and environmental orientations in the context of SMEs: Implications for innovation performance
16	2023	Schöggl, J.P., Stumpf, L. and Baumgartner, R.J., 2023.	How Corporate Reputation Disclosures Affect Stakeholders' Behavioral Intentions: Mediating Mechanisms of Perceived Organizational Performance and Corporate Reputation
17	2022	Hoelz, J.C. and Bataglia, W., 2022.	Corporate Reputation and Strategic Alliance Performance.
18	2020	Miller, S.R., Eden, L. and Li, D., 2020.	CSR Reputation and Firm Performance: A Dynamic Approach
19	2022	Anokhin, S., Morgan, T., Schulze, W., & Wuebker, R. (2022).	The role of inter-organizational collaboration and digital technologies in the implementation of circular economy practices—Empirical evidence from manufacturing firms.
20	2018	Odriozola, M. D., Martin, A., & Luna, L. (2018).	Labour reputation and financial performance: is there a causal relationship?
21	2022	Világi, R., Konečný, M., & Ruschak, M. (2022)	Topic: Impact of Selected Financial Indicators on A Company's Reputation
22	2018	Ginesti, G., Caldarelli, A., & Zampella, A. (2018).	Exploring the impact of intellectual capital on company reputation and performance

	Date of Publication	Authors	Theme
23	2020	Flores-Hernández, J. A., Cambra-Fierro, J. J., & Vázquez-Carrasco, R. (2020).	Sustainability, brand image, reputation, and financial value: Manager perceptions in an emerging economy context.
24	2021	Božić, B., Kolić-Stanić, M., & Jurišić, J. (2021). performance. 19(2), 281-294.	The Relationship between Corporate Social Responsibility, Corporate Reputation, and Business Performance.
25	2019	Sayilir, O., & Victor, T. C. (2019).. 10(5), 1143-1153.	Corporate Reputation and Business Outcomes in Turkey

4. Discussions

This section explains the results obtained in the study in line with the objectives and the problem statement. In the results, over 90% of the studies captured the reputation variable, and fifteen of the studies were also on financial performance, organizational performance, and firm performance. Analytically, five of the studies captured corporate social responsibility and financial performance, three of the studies were on employee retention and CSR and fiscal responsibility, and two on leadership and reputation. There were some mediation variables in three of the studies. From Table 2.0, the articles used for this study were adopted from the Journal of Business Research and the Journal of Business Ethics and Corporate Reputation Review.

In the review of articles before the COVID-19 pandemic, the result shows that only two related articles were published in 2018, however, their findings were divergent from the main objective because Odriozola et al.,(2018), used reputation as a tool for assessing corporate social performance of the firm, and affirmed that even though there is a relation between CSP and finance, the value could not be consolidated. The study by Axjonow, et al.,(2018) remodelled the relationship between CSR and corporate reputation and the result affirmed a positive relationship. The overview of this research exemplifies those studies before COVID-19's onset focused on the reputation of an organization about corporate social responsibility but without recourse to financial performance determiners and after COVID-19, thematic studies focussed more on reputation and performance, not necessarily only financial performance. This suggests that in the pandemic era, many business owners decided to do something that would attract customers to search and use or buy their products. So most of the concentration was on reputation, however after the pandemic researcher's concern should have focussed more on the impacts of the reputation investment on their finance, but less work and there is still a lacuna to be filled.

The overall study results of this study affirm the continuous relevance of this study to business leaders and managers since the priority of shareholders is for their business to perform financially, environmentally, productivity-wise.

The result from the study confirms that there is indeed an increasingly important and rapidly growing need to focus on the reputation of SMEs to help improve their marketability and ensure growing performance which is affirmed in the studies. Additionally, the majority of the articles focussed on the reputation and less on the financial performance of the firm and concluded a positive relation, however, most of the performance measured in this study is attributive to perceived performance. others also elucidated the need for further studies to explicitly reveal the empirical financial importance of influence since it is concealed or perceived among stakeholders.

Thematically, most of the topic on reputation has been linked with CSR or ESG which portrays more of environmental reputational concern than products and financial. Additionally, there was only one direct link to the theme, but it focused on digital reputation and financial performance since more digital tools were used during the pandemic period (Rosamartina, S., Giustina, S. and Angeloantonio, R.,, 2022).

Although the majority of the study was on reputation, there was a lack of a direct link between reputation and financial performance. Some studies argued and related their performance to employees' work contribution, while others related the performance to environment and product. For instance, Sayilir, O. and Victor, T.C.(2019) echoed that, a good reputation will attract more customers to the firm and others will give positive references in terms of product quality.

According to Flores-Hernández, et al., (2020) study opined that unlike the developed economies context, where reputation can easily be linked with performance, in emerging economy contexts, there is a non-existence of direct relationships linking CSR and company financial value. This suggests that extant studies should be focussed on that context to verify their assertion. The study also believes that corporate social responsibility is a determinant of reputation.

Few of the studies concentrated on SMEs' reputation and financial performance, with the majority of them on large firms. This affirms the lacunae in research on SMEs meanwhile it is the driver of most emerging economies. Theoretically, most of the studies relied on signal theory, Resource-based theory, and stakeholders' theory. Methodologically, some of the studies used a qualitative approach, whilst others used a quantitative approach and descriptive research being either PLS-SEM or logit regression some of the studies relied on primary data through the administration of questionnaires whilst others used secondary data from Fortune 500 and other reputational ranking research organizations.

Deduction from this study further aligns with other empirical studies which affirm that the performance of a firm could be organizational (environmental, employee and financial). Even on financial determiners, it could either be subjective variables or objective variables. Evidence from this study confirmed most of the perceived financial performance.

Finally, the report from Table 3.0, indicates that most of the articles were published in 2020, and 2022 with less in 2018 and 2019, however, one paper was accepted in 2022 but published in 2023.

5. Summaries and Conclusions

This section summarizes the overview of the research on systematic literature review on reputation and financial performance of firms and deduced from the discussion of the study, that several studies have been researching on the theme, the conclusion is not tentative enough to affirm that there is a direct relationship between reputation and financial performance as such there is the need for more research to affirm this assertion and established clarity although various stakeholders hold these perceived facts. As established by some studies the business reputation of SMEs has a profound influence on the financial performance of the firms as such there is the need to ensure business leaders, employees, products, services, and the image of the firms are projected to improve firm or SME performance. The continual digitalization of economies places an enormous burden on SMEs to work towards a good image.

5.1 Limitations and Implication

This research is limited by the scope of search where only articles from the Web of Science and Scopus database were used whereas other articles are equally good but were not selected. Additionally, there were other articles in other languages apart from English which was equally good but were not selected.

Future studies should include assessing the impact of business reputation on the finance of businesses in developing and developed contexts. The actual financial contribution from reputation investment. For effective sampling measure response, the number of articles used could be increased instead of only 25. This study informs the researcher about the focus and future direction in the area of reputational research and helps managers make decisions about investment in reputation.

Acknowledgements

The authors would like to thank IGA for providing financial support for the completion of this research and my supervisor Associate Prof. Jan Dvorsky (PhD) for his guidance and direction.

References

- Anagnostopoulou, S. C., Buhalis, D., Kountouri, I. L., Manousakis, E. G., & Tsekrekos, A. E., 2019. The impact of online reputation on hotel profitability. *International Journal of Contemporary Hospitality Management*, 32(1), pp. 20-39.
- Anokhin, S., Morgan, T., Schulze, W., & Wuebker, R. (2022). Is a reputation for misconduct harmful? Evidence from corporate venture capital. *Journal of Business Research* Volume 138, pp. Pages 65-76.
- Ardito, L., Raby, S., Albino, V. and Bertoldi, B., 2021. The duality of digital and environmental orientations in the context of SMEs: Implications for innovation performance. *Journal of Business Research* 123, p. 44–56.
- Axjonow, A., Ernstberger, J., & Pott, C, 2018. The impact of corporate social responsibility disclosure on corporate reputation: A non-professional stakeholder perspective. *Journal of Business Ethics*, pp. 151, 429-450.
- Basdeo, D.K., Smith, K.G., Grimm, C.M., Rindova, V.P. and Derfus, P.J., 2006. The impact of market actions on firm reputation. ... *Strategic Management Journal*, Volume 27(12), pp. 1205-1219.

- Baumgartner, K. T., Ernst, C. A., & Fischer, T. M., 2020. How corporate reputation disclosures affect stakeholders' behavioural intentions: mediating mechanisms of perceived organizational performance and corporate reputation. *Journal of Business Ethics*, pp. 1-29.
- Baxter, C., 1999. Field Marshal Bernard Law Montgomery, 1887-1976. In: *A Selected Bibliography*. USA.: Bloomsbury Publishing.
- Collings, D.G., McMackin, J., Nyberg, A.J. and Wright, P.M, 2021. Strategic human resource management and COVID-19: Emerging challenges and research opportunities. *Journal of Management Studies*, Volume 58(5), p. 1378.
- Danik, L. and Lewandowska, M., , 2013. Motives and barriers in the field of cooperation between companies. Research outcomes based on the Polish engineering industry. *Journal of Economics & Management*, ., Volume 14.
- Flores-Hernández, J.A., Cambra-Fierro, J.J. and Vázquez-Carrasco, R., 2020. Sustainability, brand image, reputation and financial value: Manager perceptions in an emerging economy context. .. *Sustainable Development*, Volume 28(4), pp. pp.935-945.
- Gangi, F., Daniele, L. M., & Varrone, N., 2020. How do corporate environmental policy and corporate reputation affect risk-adjusted financial performance?.. *Business Strategy and the Environment*, 29(5), pp. 1975-1991.
- Gardberg, N. A., Zyglidopoulos, S. C., Symeou, P. C., & Schepers, D. H., 2019. The impact of corporate philanthropy on a reputation for corporate social performance. *Business & Society*, 58(6), pp. 1177-1208.
- Glaister, K.W. and Buckley, P.J., 1996. Strategic motives for international alliance formation... *Journal of Management Studies*, Volume 33(3), pp. 301-332.
- Imran Ali, Murad Ali, Georgiana Grigore, Mike Molesworth, Zhongqi Jin, 2020. The moderating role of corporate reputation and employee-company identification on the work-related outcomes of job insecurity resulting from workforce localization policies. *Journal of Business Research* 117, pp. 825-838.
- Lamotte , O. Chalençon, L.,Mayrhofer U.,and Colovic A. , 2021. Intangible resources and cross-border acquisition decisions: The impact of reputation and the moderating effect of experiential knowledge. *Journal of Business Research*.
- Lev, B., & Gu, F., 2016. The end of accounting and the path forward for investors and managers. Hoboken, NJ: Wiley. *for investors and managers*. Hoboken, NJ: Wiley.
- Lev, B., 2019. Ending the accounting-for-intangibles status quo.. *European Accounting Review*, 28(4), p. 713–736.
- Liu, Y.F., Li, H. and Liang, S., 2022. Any reputation is a good reputation: influence of investor-perceived reputation in restructuring on hospitality firm performance. *Annals of Tourism Research* 92.
- Moghaddam, K., Weber, T., Seifzadeh, P., and Azarpanah, S., 2021. Internal Reputation of the Firm: CEO Retention and Firm Market Performance. *Corporate Reputation Review* 24:, p. 205–221.
- Miller, S. R., Eden, L., & Li, D. , 2020. CSR reputation and firm performance: A dynamic approach. *Journal of Business Ethics* 163, p. 163:619–636.
- Odriozola, M.D., Martin, A. and Luna, L., 2018. Labour reputation and financial performance: is there a causal relationship? *Employee Relations*, Volume 40(1), pp. pp.43-57..
- Pérez-Cornejo, C., de Quevedo-Puente, E., & Wilson, A, 2022. In search of the roots of corporate reputation management: Being a consistent corporate social performer. *Business Ethics, the Environment & Responsibility*, 31(1),,, pp. 4-16.
- Pesotskaya, E., Selyutina, L., & Kuznetsov, B, 2021. Improving the Competitiveness of Enterprises Operating in the Construction Services Market. In *E3S Web of Conferences (Vol. 263)*, EDP Sciences, p. p. 05017.
- Quentin Dupont, · Jonathan M. Karpof, 2020. The Trust Triangle: Laws, Reputation, and Culture in Empirical Finance Research. *Journal of Business Ethics* 163: p. 217–238.
- Rindova, V.P. and Fombrun, C.J., 1999.. Constructing competitive advantage: the role of firm–constituent interactions. *Strategic Management Journal*, Volume 20(8), pp. 691-710.
- Rosamartina, S., Giustina, S. and Angeloantonio, R.,, 2022. Digital reputation and firm performance: The moderating role of firm orientation towards sustainable development goals (SDGs). *Journal of Business Research*, Volume 152, pp. 315-325.
- Sayilir, O. and Victor, T.C., , 2019. Corporate reputation and business outcomes in Turkey 1. . *Business and Economics Research Journal*, Volume 10(5), pp. pp.1143-1153.
- Singh, K., & Misra, M, 2021. Linking corporate social responsibility (CSR) and organizational performance: The moderating effect of corporate reputation, *European Research on Management and Business Economics*, 2.7(1), p. 100139.
- Stuart, T., 1998. Network positions and propensities to collaborate: An investigation of strategic alliance formation in a high-technology industry. *Administrative Science Quarterly*, pp. 668-698.
- Todeva, E. and Knoke, D., 2005. Strategic alliances and models of collaboration. *Management decision*,,, Volume 43(1), pp. pp.123-148.
- Varma, T. M., 2021. Responsible Leadership and Reputation Management During a Crisis: The Cases of Delta and United Airlines. *Journal of Business Ethics*, p. 173:29–45.
- Walker, K. and Dyck, B., , 2014. The primary importance of corporate social responsibility and ethicality in corporate reputation: An empirical study. *Business and Society Review*, Volume 119(1), pp. 147-174.
- Ye, C., Song, X., & Liang, Y., 2022. Corporate sustainability performance, stock returns, and ESG indicators: Fresh insights from EU member states.. *Environmental Science and Pollution Research*, 29(58), pp. 87680-87691.
- Zhang, L., Shan, Y. G., & Chang, M., 2021. Can CSR disclosure protect a firm reputation during financial restatements?.. *Journal of Business Ethics*, 173, pp. 157-184

Moroccan Cultural Diplomacy: Challenges, Opportunities and Levers of a New Model of Influence and Soft Power

Loubna Fouinna and Abdelmjid Lafram

School of Information Science, Rabat, Morocco

loubna.fouinna@esi.ac.ma

alafram@esi.ac.ma

Abstract: Cultural Diplomacy has emerged as a vector of influence and a potent tool for soft power in international relations. Nowadays, the realm of cultural diplomacy has become fiercely competitive. It leveraged by many countries aware of its pivotal role in increasing their soft power and expanding their sphere of influence. Morocco, a secular kingdom and one of the oldest States in the world, is also keen on investing in the field of cultural diplomacy to bolster its soft power, increase its influence and assert its position as a regional and continental leader in this area. This paper presents a new conceptual model of a Moroccan Diplomacy which takes into account the extremely rich and distinctive cultural heritage of the Kingdom of Morocco, the various achievements in this cultural field. This model is designed to be more integrated, synergistic, well-governed in order to address internal and external challenges and capitalize on the strengths and new opportunities. The paper identifies the main challenges facing Moroccan Cultural Diplomacy that impact its proficiency, including in particular the lack of a global and integrated strategic vision and thinking, limited financial resources, lack of coordination between the different stakeholders and, weak involvement of the private sector and weak culture of assessment and performance measurement. However, the paper also identifies great opportunities, such as its impressively rich cultural heritage, characterized by its multidimensional cultural diversity, which requires a new and innovative approach based on a global and integrated strategic vision. The proposed Model is designed as a new framework based on a benchmark of international best practices of several pioneering countries in the field of cultural diplomacy and combined with a documentary approach and the results of interviews carried out with professionals, managers and experts in this field. It focused on several levers of influence and counter-influence that emphasizes the importance of a global and strategic vision, strong governance standards and structures involving Regions, Cities, Non-Governmental Organizations, Moroccan Diaspora. It focused also on enhanced evaluation and measurement, and a more proactive and innovative approach to promoting Moroccan soft power by investing cultural marketing, Public-Private Partnerships, digitalization and new technologies for networking, cultural creativity and strategic cultural partnerships. The paper argues that a renewed and more strategic approach to cultural diplomacy should be guided and steered by a specialized national agency that would perform the various functions of study, research, monitoring, influence, coordination, policy convergence, control and evaluation at national and international level. Thus, by institutionalizing this strategic, synergistic and holistic approach, we can lay the foundation of a new and innovative model that could help Morocco strengthen its soft power and promote its rich and unique cultural assets and values on the global stage in a more effective manner, and strengthen so its international reputation and influence.

Keywords: Cultural diplomacy, Challenges, Opportunities, New model, Influence, Soft power

1. Introduction

Culture is defined by UNESCO “as the set of distinctive spiritual, material, intellectual and emotional features of society or a social group, that encompasses, not only art and literature, but lifestyles, ways of living together, value systems, traditions and beliefs” (UNESCO, 2001). Indeed, Culture has become a major issue, a key lever for development and an essential instrument at the service of the diplomacy of influence. States are increasingly making use of culture to extend their power and influence over States and peoples through cultural actions and cultural diplomacy to seduce, influence, convince, brand their image and position themselves on the international stage.

For Aguilar, Cultural Diplomacy is “the way in which a government presents its country to the people of another country with the aim of achieving certain foreign policy objectives” (Aguilar, 1996). Cultural diplomacy can be defined also, according to Milton C. Cummings, as being “The exchange of ideas, information, art and other aspects of culture among nations and their peoples in order to foster mutual understanding which can also be more of a one-way street than a two-way exchange, as when one nation concentrates its efforts on promoting the national language, explaining its policies and point of view, or “telling its story” to the rest of the world» (Cummings, 2013). It should also be noted in this context that although Cultural Diplomacy is most often mentioned in terms of dissemination, influence, even exchanges or cooperation, it always has a tacit objective of influence. This is what Joseph Nye (1990) called soft power or “cultural attraction”. Nye considers that “Hard power is push; soft power is pull.” Or to extend a common metaphor, hard power is like brandishing carrots or sticks; soft power is more like “a magnet” (Nye, 2021).

Cultural diplomacy does not necessarily involve formal exchanges (Dines, 2020). In its book entitled "How to win hearts and minds" Asia-Europe Foundation (ASEF) considers that in cultural diplomacy, unlike traditional diplomacy, there are no immediate expected results. As Akami said, "Cultural diplomacy aims to introduce social and political ideas, values and norms to the host country in an accessible and enjoyable way so that they may take root and flourish over time. Cultural diplomacy initiatives have the added advantage of being accessible to young people and to non-elite groups. Cultural diplomacy may foster mutual understanding among nations, bolster other diplomatic initiatives, improve overall public opinion and engender goodwill between nations. This in turn generally results in greater economic cooperation, reduces chances of violent conflict and forges stronger political ties." (Akami, 2008).

Thus, Cultural Diplomacy is understood as a tool for sharing, for dialogue between civilizations, for disseminating the values of peace and tolerance that each State is called upon to promote for mutual international understanding. As Akami said (2008) "If each country could make its own culture and civilization understood, this will promote international understanding strongly. The government will coordinate official and private efforts, and equip them with appropriate external and domestic institutions".

Like other countries worldwide, Morocco pays particular attention to its culture and cultural diplomacy as levers of Moroccan soft power. Indeed, culture is one of the strategic choices proposed by the Moroccan Special Commission on the Development Model (SCDM) which considers that "culture in Morocco is destined to become a multidimensional lever of economic prosperity, inclusive social ties and geopolitical soft power: it is a matter of national unity in connection with the demand for meaning and historical and identity markers; culture also offers a source of growth, investment and employment closest to the territories and local needs; Morocco's historical depth is an asset to be leveraged as a source of regional stability, cultural influence and coexistence" (SCDM, 2021). The SCDM emphasized in its strategic orientations on the levers of Moroccan soft power. It has formulated strategic orientations as a framework for initiatives for all stakeholders to work collectively to achieve objectives in the field of culture. The Moroccan cultural potential as a powerful vector of Morocco's soft power plays a key role in the influence of the Kingdom and the success of the New Development Model. In this context, the SCDM considers that "The mobilization of the soft power of the Kingdom resulting from its millennial history, its culture, its fundamental choices and its institutions would contribute to the success of the New Model of Development, to the influence of Morocco, and respect for its specificity, sovereignty and territorial integrity" (SCDM, 2021).

However, the current Moroccan model of cultural diplomacy faces several challenges. A global, integrated, coherent and engaged approach is missing, which has a significant impact on the proficiency and capacity of Moroccan Cultural Diplomacy. In this context, several questions arise: how to overcome the weaknesses identified in Moroccan cultural diplomacy and capitalize on its strengths? How to ensure coordination and consultation between the different Stakeholders? Towards what kind of Cultural Diplomacy model can we evolve to ensure the influence of Morocco, strengthen its cultural soft power, and defend the Nation's highest interests?

2. Theoretical Framework and Research Methodology

2.1 Theoretical Framework

This paper presents main findings based on Nye's theoretical framework focusing on the concept of influence and soft power of Joseph Nye (1990), used to analyze the capacities of influence and persuasion of States in the context of cultural diplomacy. This paper tries to explore how cultural diplomacy can be used, understood and assessed through the dimensions of soft power, cultural attraction, and building a nation branding (Nye, 1990). These dimensions are based on the diversity, quality and relevance of a country's culture, traditions, language, arts and institutions, as well as many other cultural expressions.

We have also mobilized the Stakeholders Theory in the sense and spirit of Freeman (1984). This theory enabled a detailed understanding of the dynamics of stakeholders and their impact on the multifaceted and multilevel processes, procedures, programs and activities of cultural diplomacy. This theoretical framework allowed us to analyze the different challenges and opportunities and to get a holistic view of the ecosystem of cultural diplomacy, considering the different interests, expectations and power dynamics of the stakeholders involved (Countries, national entities, international organizations, practitioners, target audiences, etc.). This theoretical perspective allowed us to identify potential synergies, as well as collaborative and co-construction efforts between stakeholders, thus facilitating the development of synergistic and mutually beneficial initiatives. Through recognizing the diverse needs and aspirations of stakeholders, the proposed new model of Moroccan

cultural diplomacy can better leverage partnerships, enhance cultural exchanges and strengthen international ties.

2.2 Research Methodology

This qualitative research, carried out in the field of Moroccan Cultural Diplomacy, has been completed according to an integrating conceptual model based on a documentary approach combined with the results of interviews with professionals, managers and experts in this cultural field. We have also used the benchmark approach of the best practices carried out by other pioneering countries in the field of cultural diplomacy.

Our research has allowed us to create a global and synthetic map of the major challenges and key opportunities of Moroccan cultural diplomacy. In light of the main results, we derive the levers of a new influence model and Moroccan cultural soft power. It makes a strategic and managerial contribution, drawing a panorama of the diversity of actors, the diversity of actions and the need to create a synergistic convergence between all stakeholders in the cultural diplomacy ecosystem. Therefore, we have concluded our paper with a conceptual model presenting the main levers of what we can call the renewed and innovative model of Cultural Diplomacy 4.0.

3. The Main Challenges of Moroccan Cultural Diplomacy

The results of our research have allowed us to highlight the main challenges facing Moroccan Cultural Diplomacy which we can describe as follows:



Figure 1: Main Challenges of Moroccan Cultural Diplomacy

The first challenge is the lack of a clear, comprehensive, global and integrated strategic vision that involves all stakeholders and actors both in Morocco and abroad, and exploits the synergies that can be achieved between the different institutional and extra-institutional actors. Our research also revealed the lack of coordination between the various public actors, particularly those involved in Moroccan cultural diplomacy. These lacks have been pointed out by various Moroccan entities, including the Court of Auditors, which particularly raised the inadequacy of the coordination mechanisms between the institutional stakeholders in the cultural offer intended for Moroccans around the world, in addition to the absence of a global and strategic vision of the digitalization of the cultural offer. Various ministries, agencies, offices and foundations act within their statutory responsibilities and missions to promote cultural exchanges and dialogue between Morocco and other countries of the world, without pooling of resources and synergies of means and a real convergence of policies and strategies between the different public actors. Furthermore, we noted the limited financial resources. In fact, budget constraints effectively affect the implementation of various large-scale initiatives and actions of Moroccan cultural diplomacy. Since cultural diplomacy is essentially a budgetary expense, the lack of sufficient financial resources has a significant impact on the effectiveness and efficiency of Moroccan cultural diplomacy.

The third challenge is related to the weak involvement of the Moroccan private sector in the initiatives and programs of Moroccan Cultural Diplomacy. Despite significant endeavors by the General Confederation of Moroccan Enterprises (GCME) and the Moroccan Federation of Cultural and Creative Industries are making considerable efforts to promote Morocco and increase its cultural visibility, however, there is not really a strong involvement of the private sector.

The fourth major challenge revealed by our research is the weak culture of evaluation and performance measurement in the realm of cultural diplomacy. Moroccan cultural diplomacy is carried out in a scattered manner among various entities. This fragmented and divergent variety of policies, strategies, initiatives poses significant challenges in terms of evaluation and achievement assessment, and lacks organization and objectivity. This indicates a weak culture of evaluation and accountability.

The fifth challenge is the lack of sufficient, qualified and trained human resources in the specific field of cultural diplomacy able to increase the effectiveness of programs and initiatives. Furthermore, it is important to highlight the low use of new digital technologies, which limits their potential for Moroccan cultural diplomacy and complicates the media visibility and dissemination of cultural productions at international level. Another crucial challenge is the fierce competition between the different countries to export their cultural model. It is an extremely competitive field that mixes issues of cultural identity with all the economic and financial issues related to the contribution of cultural diplomacy to each country GDP (cultural cooperation programs, cultural economy, Cultural and Creative Industries, revenues from tourism and income from festivals, museums and other forms of cultural activities and initiatives). In addition, we can also mention the issues and challenges related to the protection, strengthening and preservation of Moroccan cultural heritage. This requires additional efforts to strengthen the Moroccan cultural heritage, an intelligent warning system to prevent any attempt at usurpation, appropriation of any elements of this heritage, spoliation of this Moroccan rich cultural heritage. Strengthening, protection and preservation systems are necessary to protect, strengthen and promote Moroccan culture on a continental and international scale.

4. Key Opportunities of Moroccan Cultural Diplomacy

Despite the fact that there are many challenges to overcome, our research has also shown the existence of a multitude of opportunities to be seized. These include the following key opportunities:

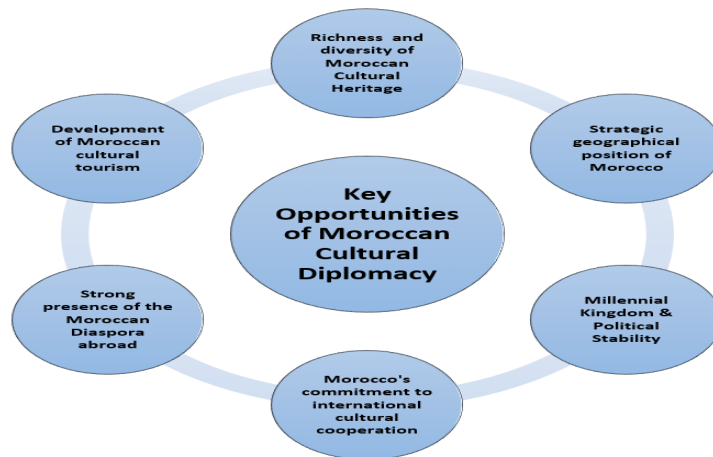


Figure 2: Key opportunities of Moroccan Cultural Diplomacy

The first opportunity to seize and highlight is the richness and diversity of Moroccan culture (CCDM, 2021). Morocco has an impressively rich cultural heritage that is characterized by its multidimensional diversity. It requires a new innovative approach, resulting from a global and integrated strategic vision, offering tremendous opportunities to share its history, crafts, traditions and arts with the rest of the world.

We can also note the strategic geographical position of Morocco and its fundamental specificity as the cradle of humanity, with the discovery of the World's oldest Homo sapiens fossils dating back to 300.000 years, found at a site in Jebel Irhoud in Morocco. It is also a millennial Kingdom among the oldest States in the world created since 791, politically stable, enjoying a shining image of a Country of tolerance, peace and brotherhood and a bridge between Africa, Europe and the Middle East. As enshrined in the country's Constitution, Morocco's distinctive feature is that "its unity is forged by the convergence of its Arab-Islamist, Amazigh and Saharan-

Hassanic components, nourished and enriched by its African, Andalusian, Hebraic and Mediterranean influences". At this level, as a melting pot and unique blend of influences and diverse cultural backgrounds, Morocco can play a key role in fostering cultural cooperation particularly across Africa (SCDM, 2021).

One of the most stimulating opportunities is the increasing growth of cultural tourism in Morocco (Federico, 2020), mainly due to the growing popularity of the Moroccan destination, particularly after the sporting achievement of the national football team during the 2023 World Cup, arousing an unprecedented enthusiasm for the destination of Morocco. We have also noted a dynamic of cultural cooperation and collaboration with other countries. Furthermore, Morocco hosts a wide range of cultural festivals and events creating platforms for cultural exchange and diplomacy.

Another opportunity to seize is the important role of artistic and cultural exchanges with the Moroccan diaspora, which is deeply connected to its homeland and traditions. In addition to the substantial investments in cultural infrastructures, in particular museums, artistic centers and renowned festivals giving a new image of Morocco and consequently strengthen its soft power on the regional, continental and international levels.

5. Levers of a new Model of Moroccan Cultural Diplomacy

The conceptual model we recommend is an integrative, synergistic, agile and resilient framework. It arises from an informed forward-looking strategic vision, and is supported by a planning and visionary governance that will intelligently lay the groundwork for a new and innovative model of Moroccan Cultural Diplomacy.



Figure 3: Moroccan Cultural Diplomacy Framework Levers

It is a new model designed in an overall logic according to a long-term strategic vision with a focus on the enhancement and preservation of Moroccan heritage and cultural identity. It is also founded on the strengthening of partnerships and international collaborations, the use of digitalization and the use of emerging and innovative technologies and the mobilization of the necessary resources to promote and sustain programs, projects and various initiatives of Moroccan cultural diplomacy.

Indeed, it is crucial to have a solid, coherent and integrated cultural policy redesigned according to a global and forward-looking strategic vision. This cultural policy should be declined in a long-term strategic plan of cultural diplomacy which integrates the defined objectives and establishes performance indicators to measure the progress of Moroccan cultural diplomacy.

The second lever is related to new and solid governance based on the mobilization of the entire ecosystem of Moroccan cultural diplomacy by further involving of what Ang, Isar and Mar (2015) consider as third party actors, such as the private sector, the Regions and the Cities in the emergence of a rich Moroccan cultural offer well adapted to the countries. At this level, it is recommended to turn to the "agencification" of cultural diplomacy via the creation of a structure with national competence dedicated to Moroccan cultural diplomacy that oversees the alignment of cultural strategies and policies, collaboration among different parties, and the consolidation of resources and endeavors. Indeed, the creation of a Moroccan Agency for Cultural Diplomacy will provide the necessary leadership driven by a global, forward-looking and innovative strategic vision. This structure can also rely on departments contributing to the achievement of the expected objectives such as a cultural diplomacy observatory to monitor and evaluate the actions carried out, by providing data and analyzes to guide strategic decisions, marketing and communication department, strategy and forecasting.

The third lever is the mobilization of sufficient and diversified financial resources: Cultural Diplomacy is essentially a budget-intensive activity and requires significant investment, and Morocco needs to provide

substantial financial support to ensure its influence. To promote Moroccan artistic creation and innovation, it is crucial to establish alternative and innovative mechanisms for funding artists and cultural professionals. To promote artistic creation and innovation in Morocco, it is crucial to establish alternative and innovative mechanisms for funding artists and cultural professionals.

At this level, it is proposed to promote public-private partnerships (PPP) in the realm of culture. Such partnerships would prove highly advantageous in facilitating an efficient, effective, and high-quality Moroccan cultural diplomacy. By leveraging the resources and expertise of both entities, large-scale cultural diplomacy endeavors can be realized. The public sector can benefit from the expertise, skills, financial resources and managerial efficiency of the private sector, resulting in greater Moroccan cultural diplomatic influence. An additional significant lever is the valorization and preservation of Morocco's tangible and intangible cultural heritage through a new comprehensive and integrated strategy to support and protect against the spoliation of symbols, arts, traditions, and all of Morocco's tangible and intangible cultural heritage. A strategy of influence and counter-influence is necessary at this level.

Moreover, the valorization and promotion of Cultural and Creative Industries can be achieved through the utilization of a vital and significant tool for the progress of the nation, which is economic diplomacy. The aim is to utilize the economic and financial advantages of cultural diplomacy to stimulate economic development, by encouraging trade in the cultural and creative sectors, such as cultural tourism, crafts and creative industries or what Howkins (2001) qualified by the creative economy. Promotion of cultural tourism is also an effective way of promoting tourism as cultural diplomacy can act as a strong tool for tourism promotion. It serves as a significant factor of differentiation and motivation that can lure international tourists and lead to favorable economic outcomes.

Our conceptual framework also focuses on training and capacity building of professionals and different stakeholders involved in Moroccan cultural diplomacy. It is highly recommended to allocate a significant amount of resources towards training and ongoing education, particularly in the fields of info-cultural management, intercultural management, project management, intercultural communication, cultural influence, cultural and territorial marketing, entrepreneurship culture, cultural startupper, innovation and cultural design, and other relevant areas. This investment will lead to enhanced efficiency and a significant, enduring, and beneficial effect. An important aspect to highlight is the utilization of various forms of diplomacy, including gastronomic and sports diplomacy, as strategic tools for Moroccan cultural diplomacy. This can be achieved by hosting continental, particularly African, and global gastronomic and sporting initiatives and events, and by promoting traditional Moroccan cultural values, customs and traditions through gastronomy and sports. Such efforts can result in valuable and collaborative outcomes that project cultural identity, encourage intercultural dialogue and mutual understanding, and strengthen cultural diplomacy, collectively contributing to a Moroccan strong soft power image on the global stage.

We should also mention the importance of bilateral and multilateral cooperation and the crucial role of win-win new generation strategic partnerships with the pioneer States in Cultural Diplomacy through joint initiatives, programs and projects of common interest. In this context, it is recommended to strengthen strategic partnerships with target countries, and international institutions and organizations in the field of culture to enhance financial resources, complementary expertise and exchange emerging best practices and knowledge in various cultural fields such as culture, traditions, crafts, music, theatre, gastronomy, films and media collaborations, enhancement and preservation of tangible and intangible cultural heritage and cultural mobility program. Additionally, it is equally pivotal to stress Morocco's position in international cultural bodies responsible for safeguarding the country's interests and influence.

The domain of cultural diplomacy requires significant cooperation and integration within exchange networks and global cooperation. It is essential to create networks of cultural diplomacy, the establishment of Networks of cultural diplomacy professionals and communities of artists and cultural professionals at regional, continental and international level to strengthen connections, simplify exchanges, and promote and reinforce national and international collaboration in this field. Such networks will prove invaluable in promoting the exchange of artists, creators and cultural experts to foster intercultural dialogue, mutual understanding and collaboration.

An additional approach to employ is enhancing and fortifying the diasporic contribution. A new strategy in order to mobilize the Moroccan diaspora to promote Moroccan culture abroad by establishing very dense and close links with Moroccan diaspora communities and by organizing cultural events. Moroccans worldwide serve as pivotal figures in disseminating Moroccan culture abroad, serving as cultural ambassadors and nurturing bonds with their homeland.

One of the most important strategies recommended in this research is to boost and market Cultural and Creative Industries by placing greater emphasis on economic diplomacy. This involves leveraging the economic and financial benefits of cultural diplomacy to drive economic growth, while encouraging collaboration and exchange within the cultural and creative fields. This approach also involves promoting cultural tourism, as cultural diplomacy is a potent tool for attracting foreign visitors and generating significant economic advantages through differentiation and stimulation.

We have also identified an integrated marketing and communication strategy that will play a pivotal role in boosting Moroccan Cultural Diplomacy. To achieve this, we suggest implementing a global and comprehensive strategy that brings together all stakeholders and creates a cohesive approach. To ensure that the strategic objectives are met, it is essential to target specific populations and prioritize geographical areas as Africa and Asia. Organizing large-scale cultural events and missions abroad will be instrumental in showcasing Moroccan traditions and arts. This can be achieved through thematic festivals, international exhibitions, and intercultural forums that highlight the country's cultural heritage and present it to a global audience.

"The emergence of digital technologies has had a profound impact on the conduct and study of diplomacy" (Manor, 2018). Undoubtedly, in the age of digitalization, platforming and digital transformation, it is crucial to use digital technologies to strengthen Moroccan cultural diplomacy in terms of Manor 's four dimensions: institutions, practitioners, audiences and the conduct of diplomacy. Thus, in order to captivate the younger generations and to expand the reach by attracting a large international audience, it is advisable to use new, innovative and emerging technologies such as social networks, virtual reality and online platforms to strengthen the virtual presence over digital platforms dedicated to advertising Moroccan culture. Moreover, partnering with digital media from around the world is encouraged to increase media exposure and promote greater enthusiasm for Moroccan culture. Another lever that should be emphasized is the key role of monitoring and evaluation mechanisms to measure the impact of cultural diplomacy initiatives, to monitor the economic impact, the media exposure, the partnerships established and the noticeable changes in the perception of Moroccan culture on the whole world. When evaluating, some powerful criteria need to be analyzed, such as Kleistra and van Willigen's (2010) four criteria, namely connectedness, responsiveness, timeliness and scope.

These aforementioned levers should help to maximize opportunities and overcome the above challenges and enhance Moroccan cultural soft power or what Nye qualified "cultural attraction". It should be noted that the development of a new model cannot be achieved in isolation. Rather, it requires a collaborative and concerted effort involving all stakeholders. This process should be based on collective intelligence, fostering creativity and innovation, leading to the establishment of a robust and effective model that enhances Morocco's Nation Branding and increase its prominence in the realm of global cultural diplomacy.

Therefore, this proposed model can be operationalized through new strategic steering and good governance led by a National Agency of Cultural Diplomacy with a synergistic, global and integrative approach, and by taking advantage of all Moroccan cultural dimensions in their specificity, diversity and richness. It can be implemented also by relying on the fundamental role that can be played by the Moroccan Diaspora in all its diversity reflecting Morocco's cultural heritage as a blend of Arab, Amazigh, African, Mediterranean, and Jewish influences.

6. Conclusion

This paper provides a strategic framework to reinforce the potential and effectiveness of Moroccan cultural diplomacy ecosystem and improve its capacity to address various challenges. The challenges highlighted by our research show that Cultural Diplomacy is a complex and constantly evolving field that requires an innovative, forward-looking, adaptive approach to tackle both intrinsic and extrinsic obstacles. Furthermore, we have identified several opportunities to increase Moroccan cultural influence and to fully exploit the potential of Moroccan culture in promoting mutual understanding, sharing Moroccan values and traditions and intensifying Morocco's global cultural impact and influence. The recommended Moroccan cultural model is based on a synergistic and integrative conceptual framework. It was designed through a global, integrated and forward-looking vision that we call Moroccan Cultural Diplomacy 4.0, with two driving forces, namely the policy of influence combined with the policy of counter-influence. It is a connected cultural diplomacy, agile and proactive, resilient and adapted to the local, regional and international environment. This framework facilitates the transition to a smart cultural diplomacy model by combining a strong foundation of good governance, an insightful strategic vision, synergies, integration, resilience and sustainability, and most importantly, in line with the strategic priorities, directions and guidelines of Morocco's foreign policy.

References

- Aguilar M. (1996) *Cultural Diplomacy and Foreign Policy: German-American Relations, 1955-1968*, New York, Peter Lang.
- Akami, T. (2008) 'The emergence of international public opinion and the origins of public diplomacy in Japan in the inter-war period', *The Hague Journal of Diplomacy* 3, no. 2.
- Ang, I., Yudhishtir R. I., Mar. P. (2015) "Cultural Diplomacy: Beyond the National Interest?" *International Journal of Cultural Policy* 21 (4): 365–81.
- Amen, M., Toly, N. J., Mc Carney, P. L., & Segbers, K. (2011). *Cities and global governance. New sites for international relations*: Routledge.
- ASEF (2016) *Public Diplomacy Handbook how to win hearts and minds*.
- Cummings, M. C. (2013). *Cultural Diplomacy and the United States Government: a Survey*.
- Dines, N. (2020) Moroccan City Festivals, Cultural Diplomacy and Urban Political Agency. *International Journal of Politics, Culture, and Society* (2021) 34:471–485
- Federico, E. (2020) "Finding A "True Morocco:" How Tourists Change Moroccan Economies, Infrastructure and Cultures". Independent Study Project (ISP) Collection. 3358.
- Freeman, R.E. (1984) *Strategic management: A stakeholder approach*, Pitman, Boston.
- Howkins J. (2001) *The Creative Economy: How People Make Money From Ideas*, Allen Lane The Penguin Press, London, UK
- Kleistra, Y., Willigen, N.V. (2010) Evaluating Diplomacy: A Mission Impossible? *Evaluation*, 16: 2, 119-135, Available from: <https://journals.sagepub.com/doi/10.1177/1356389009360476>
- Manor, I., (2018) "The Digitalization of Diplomacy: Toward Clarification of a Fractured Terminology," Working Paper. Exploring Digital Diplomacy, Available from: https://www.researchgate.net/publication/319015855_Digital_Diplomacy_Working_Paper_The_Digitalization_of_Diplomacy-Toward_Clarification_of_a_Fractured_Terminology
- Nye, J. S. (2021): Soft power: the evolution of a concept, *Journal of Political Power*.
- NYE, J. (1990). « Soft power », *Foreign Policy*, 80.
- Oosterlynck, S., Beeckmans, L., Bassens, D., Derudder, B., Segaert, B., & Braeckmans, L. (Eds.). (2019). *The City as a global political actor*. Routledge.
- Special Commission on the Development Model (SCDM)(2021) *The New Development Model: Releasing energies and regaining trust to accelerate the march of progress and prosperity for all*.
- Triandafyllidou, A., Szucs, T. (2017) EU cultural diplomacy: challenges and opportunities, Policy Briefs, 2017/13, Global Governance Program, Cultural Pluralism
- UNESCO (2009) *Framework for Cultural Statistics (FCS)* Prepared by the Institute for Statistics of the United Nations Educational, Scientific and Cultural Organization (UIS).

What are the Drivers of Competence Management?

Lisa Gaudens^{1,2}, Muriel Davies² and Stéphanie Buisine²

¹EDF, DPN, DRHM, Paris, France

²CESI, LINEACT, Nanterre, France

lisa.gaudens@edf.fr

mdavies@cesi.fr

sbuisine@cesi.fr

Abstract: Globalization and technological transformations emphasize the need for developing new skills and acting at the peak of one's capacities. Competence is defined as the combination of external and individual resources to fulfill one's job demands and contribute to the organization's purpose. It corresponds to feeling effective and efficient in one's actions. As such, competence is one of the basic psychological needs, according to self-determination theory. In this paper we focus on diagnosing the drivers of competence in order to implement transformations in a specific organization to improve the use of existing resources, stimulate the development of skills and increase performance. The study was conducted in a major French company from the energy sector. We re-analyzed the corpus of an annual survey gathering the perception of about 11,000 respondents representing all job categories and all hierarchical levels. We conducted a Principal Component Analysis followed by multiple regressions in order to identify the predictors of feeling competent. The first analysis shows that the data could be summarized in 5 key indicators: 1. Involvement and trust in the unit, 2. Team management, 3. Meaningfulness at work, 4. Working conditions, 5. Organization and cooperation. We observed that the item addressing the feeling of competence showed high correlation with the third dimension related to meaningfulness, which further highlights the importance of competence for self-accomplishment. The next step was to search for the drivers of feeling competent in several job categories. The results show that production and maintenance exhibit very different profiles. The only common driver appears to be the role of the manager in developing employee's skills. For production employees, feeling competent is mainly linked to external resources (unit organization and social identification) whereas for maintenance employees, feeling competent rather depends on individual resources (work content, professional development). Beyond the design of custom interventions based on the specific needs of each job category, this study emphasizes that there is no unique solution for managing competence and that the key to performance and fulfilment should be found in careful analysis of the organization and its members.

Keywords: Competence management, Knowledge, Self determination

1. State of the art

1.1 Competence Management

Companies evolve in a moving, connected and constantly changing environment. Whatever the origin of these changes (economic, legal, social), they have a profound impact on the organization and content of work and, in fine, on the skills of individuals. In this changing environment, competitiveness relies on the oldest asset: human capital. Thus, advancing employees by moving from a logic of training to a logic of competence has become a real challenge to be met, because competence plays an essential role in the performance of companies.

There is no universal definition of competence. It is a polysemous notion, an object difficult to define, used in different fields: psychology, social sciences, education and training, law (Le Boterf, 2002). Even if there is no consensus on the definition of the notion of competence, there are however two dimensions that emerge in these definitions: The cognitive dimension with the triangle of knowledge, know-how, interpersonal skills; and the social dimension with the combination of knowledge, skills, attitudes.

Guy Le Boterf (2018), by modelling competence as a process, brings a new perspective gathering these two dimensions. For him, competence is based on a dual conception between being competent and having skills. To be competent is to have the capacity to act with relevance in a professional situation by mobilizing "an appropriate combination of resources (knowledge, know-how, behavior...)". Whereas having skills means having the combination of resources to "act with skills". For Le Boterf (2002), what distinguishes people at work is the "know how to act" in a sustainable way: that is to say their ability to mobilize their knowledge and reinvest it in a relevant and sustainable way in situations. In his vision, competence is not an addition but a combination of resources.

Fernagu (2018) also offers an interesting vision, defining competence as the result of the articulation of internal and external resources that cannot be thought of outside of the contexts and situations in which they take shape. In this view, skills derive from the existing link between the individual and the organization, and are "complex and dynamic" units that cannot be developed. Also, talking about the development of skills would result in an

abuse of language, since it is not possible to think of the development of something that disappears as soon as it is put into practice. Nevertheless, what is developed is knowledge and learnings related to the resources of the individual and those of the environment (Fernagu-Oudet, 2018). Skills thus result from the relationship between the individual and the organization, and it seems fundamental to study the nature of this link in order to consider developing them. We choose to adopt this definition for our research because it highlights the organization-individual interdependence which seems fundamental to us in the development of competence.

Guy Le Boterf (2008) defined a competence model based on 3 pillars: knowing, being able, and wanting to act:

- Knowing how to act: These are the means that make it possible to acquire the resources to act (knowledge, behavior, emotional resources). We can characterize this as the internal resources mobilized by the individual.
- The power to act: this includes the organizational context and the means that make it possible to implement a practice in a relevant way. We can characterize this as the external resources allowing the individual to act.
- The will to act: This implies the motivation of the employee to develop her/his professional practice, to acquire and mobilize resources.

These three elements must be brought together for employees to act as competent professionals. In addition, acting as a competent professional is a responsibility shared between the individual and his/her peers, his/her manager and the organization in which s/he is located (Fernagu-Oudet, 2018). For Fernagu-Oudet (2018) three dominant relationships stand out in the practice of competent action:

- The knowing subject: here the skills are considered as strictly individual attributes, decomposable and juxtaposable (knowledge, know-how, life skills).
- The acting subject: here there is no skill outside of the situations in which they are implemented. The individual adapts to situations according to the resources at her/his disposal.
- The reacting subject: here there is a dialectic between the individual and the environment in which s/he acts. Individual resources should be articulated with those of the environment in which it is embedded.

1.2 From Knowledge to Competence

The learning processes that lead to competence are still largely unknown. However, a few concepts help us understand more how it works. According to Singley and Anderson (1989), to make a transfer, learners must encounter similarities and differences between tasks, build mental patterns of relationships between the two tasks and establish a recontextualization transfer. In a transfer situation, the integration process takes place by mobilizing knowledge, skills and attitudes.

Three mechanisms (Figure 1) make it possible to understand the process of integrating knowledge with competence in the professional context. Some authors rely on transfer research to explain the integration process that makes us apply or not what we have learned. Transfer is defined by the ability to learn under new conditions by mobilizing existing knowledge and skills to perform a new task (Gick & Holyoak, 1983).

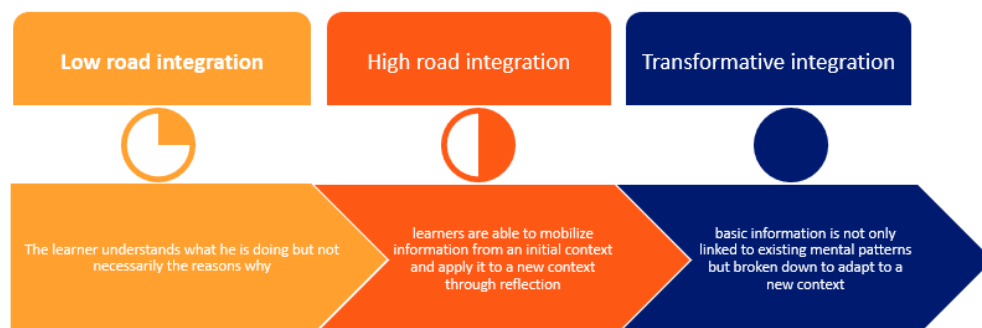


Figure 1: From knowledge to competence

Low road integration

It's the first form of integration that occurs automatically. The learner understands what s/he is doing but not necessarily the reasons why s/he is doing it, the learner is not able to understand why the task is performed in this way in a particular context. This first form usually occurs automatically as a result of a performance: a new

task that shares characteristics with previous tasks automatically triggers the required knowledge that is then transferred to a new task (Baartman & De Bruijn, 2011; Boshuizen et al., 2003). Boshuizen et al. (2003) describe how professionals develop from novice to expert via the encapsulation of knowledge that allows them to create links between concepts and thus accelerate the integration process.

High road integration

This is the second form of integration where reflection is mobilized. According to Schön (1983), the integration of knowledge to become a skill requires reflection on action in addition to practice. In this form of integration, learners are able to mobilize information from an initial context and apply it to a new context. The transition from knowledge to competence is done here through reflection, the learner must become aware of what s/he is doing. More specifically, learners think about a task, rely on existing knowledge and skills and build new mental patterns that allow them to perform a new task, this is called the assimilation process (Piaget, 1970). In summary, in this model, learners must identify what is necessary to do to carry out the task, thinking and action are combined to create new skills.

Transformative integration

The third mechanism that intervenes in the process of integrating knowledge into competence is what is called revision or accommodation (Baartman and De Bruijn, 2011). In this model, basic information is not only linked to existing mental patterns but broken down to adapt to a new context. This happens, for example, when there are dissonances between the new information received and the knowledge already acquired. This third form of integration also involves self-reflection, the learner's ability to conduct a critical reflection on what s/he is able to do. This involves cognitive, social and emotional changes that can transform the learner's identity (Baartman and De Bruijn, 2011). The different integration processes take place during the execution of tasks, which allows the formation of new skills.

1.3 Self Determination Theory

For a long time, motivation was seen as only extrinsic, especially in the field of Human Resources. Deci and Ryan's theory allows us to approach motivation from a new angle. It is no longer a question of how to motivate employees with material, financial, or social external rewards, but how to develop intrinsic motivation. For organizations, and particularly for Human Resources, this has required asking themselves how to develop an engaging and motivating dynamic that benefits both employees and the organization, because employees search for companies where they feel good and where they feel they are doing good (Rigby and Ryan, 2018).

In self-determination theory, Deci and Ryan place the different levels of motivation on a continuum, with progressive levels of regulation that we will explore below.

- The lowest level of this continuum is amotivation, which is a state that manifests itself by a complete absence of motivation and intention. We are confronted here with a disinterest of the individual for the activity concerned. The latter does not feel competent to carry it out, has the belief that his action will not produce results (Deci and Ryan, 2008). Moreover, amotivational states are often associated with poor well-being and poor quality performance (Vallerand, 2000).
- We have at the next level, the different degrees of extrinsic motivation which manifest themselves through four stages:
 1. First the so-called external regulation: here the behavior is performed to satisfy an external demand or obtain a reward (Ryan and Deci, 2000).
 2. Then introjected regulation: in this form of regulation, the individual acts by constraint to avoid a form of anxiety or guilt. The individual accepts a requirement or a request but without integrating it personally or identifying it as an action for himself. This form of submission allows individuals to improve their self-esteem and glorify their ego (Ryan and Deci, 2000).
 3. The third level of extrinsic motivation is that of identified regulation; here the individual identifies with the activity and accepts it freely once s/he has grasped the benefits that it could represent for her/him, even if it is carried out to satisfy an external demand (Ryan and Deci, 2000).
 4. Finally, integrated regulation is the most autonomous form of extrinsic motivation, because it is assimilated in certain aspects to intrinsic motivation. In this form, the activity is in harmony with the values and needs of the individual. The more the individual assimilates the meaning of the action, the more the extrinsically motivated actions are self-determined (Ryan and Deci, 2000).

The most powerful level of the continuum is that of intrinsic motivation where the individual engages voluntarily in the activity because of the pleasure s/he finds in carrying it out. This autonomous regulation makes it possible to predict an individual's perseverance and adherence to complex tasks (Deci, Olafsen and Ryan, 2017).

The self-determination theory of Deci and Ryan (1985, 2008; 2000; 2005; 2017) suggests that humans tend to satisfy, in an innate way, 3 fundamental psychological needs which are autonomy, competence and affiliation. Satisfying these needs is essential. Also, these needs are universal, observable and they apply to all organizational cultures, to all workplaces, to all people (Deci, Olafsen and Ryan, 2017). When employees are intrinsically motivated, they progress in meeting these needs and experience psychological well-being.

- Autonomy is the need for an individual to be an actor in her/his life, to have the feeling of being able to choose, to act according to her/his will and to approve the choices which concern her/him. In the company, this is characterized by the control and freedom that the employee exercises over the actions that fall within her/his scope of activity (Deci and Ryan, 1985).
- Affiliation is our fundamental need to feel that we belong to a community, that we are connected to other individuals. In the company, this need is satisfied when the collective is important on a daily basis and has its own identity (Deci and Ryan, 1985).
- Competence is our fundamental need to feel efficient and to succeed. At work, individuals need to know that they have everything they need to succeed in their activities: resources, skills, expertise (Deci and Ryan, 1985; Elliot, McGregor and Thrash, 2002).

1.4 Research Question

Considering that competence is the result of the articulation of internal and external resources to the individual, competence management will require to develop both internal and external resources. Yet, competence management in the professional context tends to be predominantly addressed through management of external resources only: managerial support, investments, design of training programs... Regarding internal resources, beyond knowledge, know how and soft skills, self-determination theory draws our attention on motivational processes likely to foster the satisfaction of the need for competence. Intrinsic motivation is particularly important to stimulate competence development in accordance with individual preferences, attitudes and behaviours. Besides, identified motivation may be driven by the meaning of work and the congruency between individual and organizational values. Figure 2 provides an overview of our conceptual framework for this research.

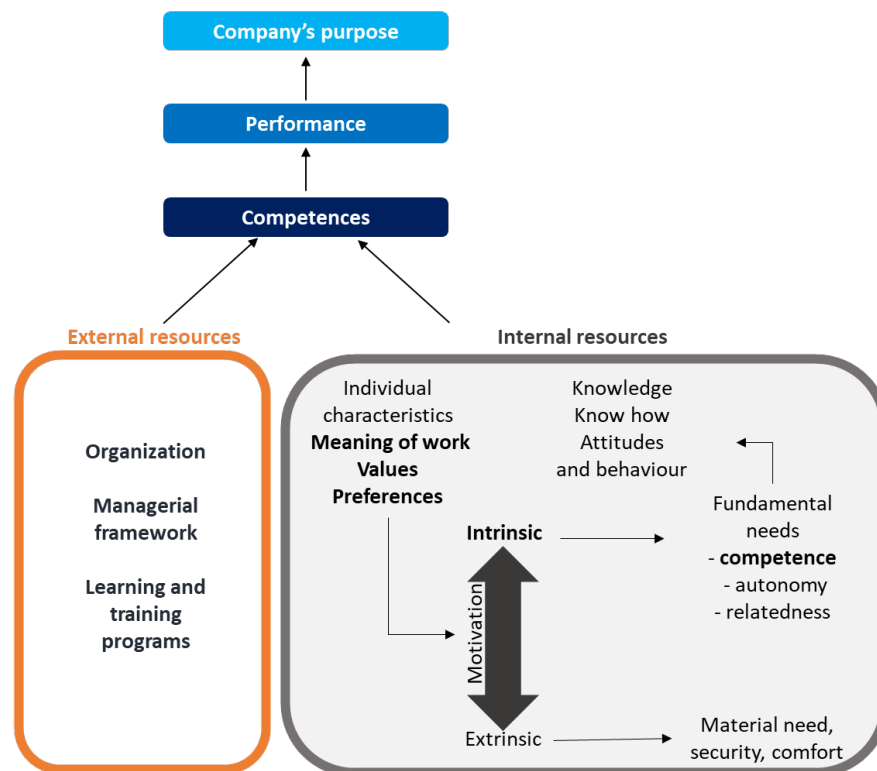


Figure 2: Our conception framework for competence management

More generally, our research question focuses on the identification of the drivers of competence management, including individual drivers (e.g., job satisfaction, professional evolution, intrinsic and extrinsic motivation) as well as organizational ones (e.g., management, culture).

The objective of our study is to find out how to encourage employees to fully develop their competence, relying not only on organizational resources and managerial injunctions, but also on their self-determined power and will. To this end, we ran a field study in a major French company from the energy sector. One of the biggest challenges for this company to achieve its ambition is to improve the performance of its power plants. There are several lines of work to achieve this purpose, our contribution will be limited to the area of competence.

2. Field Study

2.1 Context

Our study takes place in a major French electricity production company which belongs to the French state. It was created in 1946 and its activities are focused on the production of electricity from nuclear, thermal, hydraulic sources and the transportation and distribution of electricity. The company is present in many countries and is divided into several departments with about 165,000 employees.

Every year, the company collects the opinion of employees on their professional situation as well as the perception they have of their company, at local level and also at the Group level. By identifying areas of satisfaction and areas for improvement, this survey helps guide priorities and inform action plans within the teams.

In 2021, the group achieved its best participation rate with 79% of respondents, which represents approximately 115,000 employees. The survey generally takes place over 4 weeks, between the beginning of November and the beginning of December each year. It is conducted by an external survey institute, which guarantees the anonymity and confidentiality of responses. The results are presented to employees from February of the following year.

For the purpose of our study, we got access to the data of the 2020 survey for the nuclear department and re-analyzed them with a special focus on competence management.

2.2 Data Collected

The current study on competence was restricted to a specific production division representing 22,000 employees. Among them, about 11,000 answered the 51 questions. For confidentiality reasons, individual responses were not made available to us; we could only access averaged responses for teams of at least 10 employees. We extracted the results of the survey for the year 2020 from 583 teams spread over 21 units (19 power plants, 1 national operating engineering unit and central services). These teams each bring together 10 to 87 employees, with an average of 17.6 (SD = 8.3). In total, the answers of 10,281 employees are represented through the results.

The 583 teams were categorized according to their executive and non-executive population. We also categorized them according to their profession: 185 Maintenance teams, 94 Operator teams, 23 Project teams, 79 Support teams, 25 Executive teams, 177 undefined teams.

2.3 Results

We analyzed the responses to 43 questions out of 51 and gave a special attention to one of them coming closest to our object of study: this question is Item 27 "My job allows me to fully use my skills".

The first step of our analysis was to examine the factorial structure of the full corpus of 43 questions using Principal Component Analysis. The results show a structure in 5 components:

- The first component includes questions such as "I feel like an actor in the changes that are carried out in my unit", "I adhere to the strategy and orientations of my entity". We decided to name this component "Involvement and Trust in Unity".
- The second component includes questions such as "My manager invests in the development of my skills", "My manager empowers his employees". We decided to name this component "Team Management".

- The third component includes questions such as "I am optimistic about my own future within the company", "I am satisfied with my professional development possibilities". We decided to name this component "Meaning of work".
- The fourth component includes questions such as "I work in good health and safety conditions", "In my unit, we are encouraged to innovate, to seek new ideas to improve efficiency / improve our services". We decided to name this component "Working conditions".
- The fifth component includes questions such as "In my unit, we cooperate easily between departments / teams", "In my unit, we succeed in simplifying processes and organizations to increase efficiency". We decided to name this component "Organization and cooperation".

Each of these 5 components is robust from a statistical point of view (Cronbach's Alphas greater than 0.7). This means that to simplify the data, we could reduce the 43 questions to 5 key indicators. Regarding skills and need for competence, we observe that Item 27 "My job allows me to fully use my skills" correlates strongly to the third component related to meaning of work.

In a second step we focused on the professions most involved in power plant performance: Operators, Maintenance and Projects. We carried out an analysis of variance to find out whether the profession had an effect on certain variables. The results highlighted significantly different scores depending on the profession for 15 questions, showing that Maintenance systematically has lower scores than the two other professions. In particular, Maintenance exhibits a significantly lower score on the following items (Figure 3):

- Item 27 on feeling of competence "My job allows me to fully use my skills" ($F(2/299) = 19.97, p < 0.001$);
- An item related to intrinsic work motivation "I am satisfied with the content of my job" ($F(2/299) = 16.99, p < 0.001$);
- An item related to extrinsic motivation "My overall remuneration correctly rewards my performance and my contribution" ($F(2/299) = 6.61, p = 0.002$);
- An item related to professional development "I am satisfied with my possibilities of professional evolution" ($F(2/299) = 9.78, p < 0.001$).

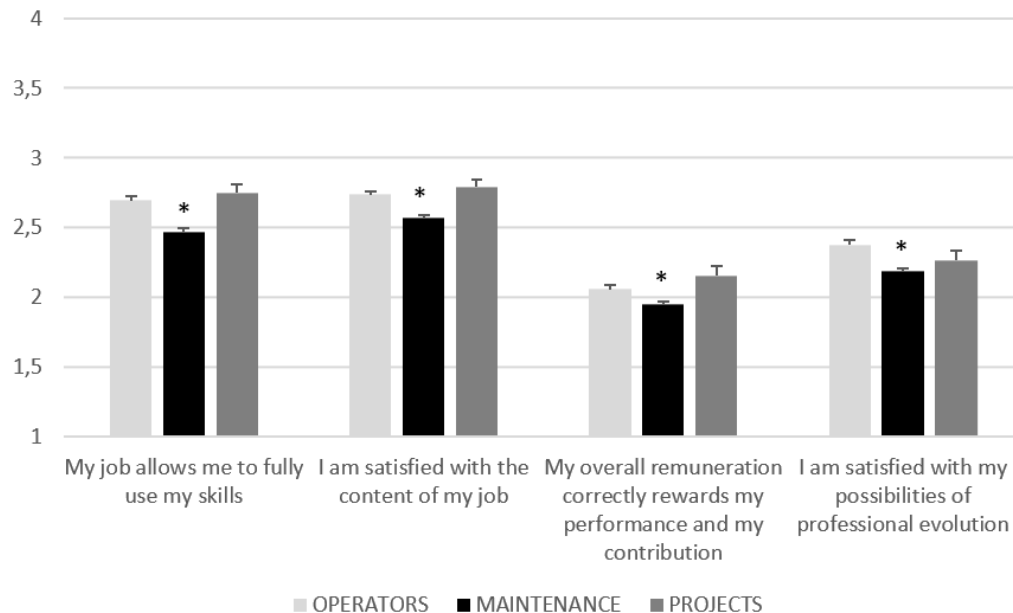


Figure 3: Effects of profession on the scores to four important variables related to competence and motivation

Finally, we searched for predictors of Item 27 "My job allows me to fully use my skills" through multiple regression and ran the analysis separately for Maintenance teams and Operators teams. We could not. Carry out the analysis for Project teams, as they were not in a sufficient number ($N = 23$ Project teams). The results (Table 1) highlight different significant predictors for Maintenance and Operator teams.

Table 1: Outline of multiple regression analyses performed on two professions: Operators and Maintenance with feeling of competence (Item 27) as Dependent Variable and all other survey questions as predictors. Significant positive predictors are highlighted in green and significant negative predictors are highlighted in red

	OPERATORS	MAINTENANCE
My manager is involved in the development of my competence	Predictor +	Predictor +
I am satisfied with the content of my job		Predictor +
I am satisfied with my possibilities of professional evolution		Predictor +
I feel involved in the changes that are carried out in my unit		Predictor +
Digital tools have a positive impact on my efficiency		Predictor +
My overall remuneration correctly rewards my performance and my contribution		Predictor +
I am satisfied with my workload		Predictor –
I have the feeling that the general situation of my unit is getting better	Predictor +	
I feel I belong to the company	Predictor +	
In my unit, we have the necessary skills to achieve our goals	Predictor +	
My manager cares about the people s/he works with	Predictor –	
In my unit, reviewing our ways of working and our organization is useless / not essential	Predictor –	
Dependent variable: “My job allows me to fully use my skills”		

The only common predictor between Maintenance and Operators is the involvement of the manager. For operators, the feeling of using one’s skills fully is rather linked to the dynamics of the unit and the feeling of belonging to the company (collective dimension). Conversely, for Maintenance, the individual dynamics is more important to determine the feeling of fully using one’s skills (work content, professional development). In addition, remuneration appears to be a positive predictor as well as the digital tools available.

3. Discussion

The aim of this study was to find a way to perform a first broad diagnosis on the main drivers of competence in a huge corporate division gathering about 22,000 employees. Conducting a proper survey dedicated to such a diagnosis would have taken months, or years, if possible at all. Alternatively, we found a way to get quickly first insights on the situation and make first methodological decisions.

We got access to the data of a yearly internal survey including an interesting question on the feeling of fully using one’s skills and re-analyzed the data for the purpose of our project. The results of the survey are routinely used to monitor employees’ satisfaction on a number of subjects and compare units with one another, based only on descriptive analyses. In contrast, we used the same data to perform inferential analyses and identify new results, point out the differences between several professions and emphasize the links between several variables – links that are implicit, unknown by the respondents themselves, and likely to guide action from an operational viewpoint.

At first sight, competence management can be restricted to designing learning and training programs, and this is the way it is often addressed in companies. However, psychological literature draws our attention of mechanisms that do not fall under the scope of learning or training. In particular, competence is acknowledged as being one of the three fundamental psychological needs, considered as innate and universal, and as such likely to strongly interact with motivational processes. Our aim in this project is to highlight such motivational drivers of competence in order to renew corporate approaches of competence management, by including motivational concerns.

In the field study we conducted, the feeling of competence appeared to correlate strongly with the dimension related to the meaning of work, which is consistent with the abovementioned theoretical framework on

motivation and self-determination, questions deep values of the individual and oversteps what can be addressed through training.

Furthermore, the predictive models computed through multiple regression analyses showed that the drivers and barriers to feeling competent were different according to professions. For Operators, feeling competent appeared to be mainly linked to external resources such as unit performance and social identification, while Maintenance teams seem to be more impacted by individual resources (e.g., work content and career development). This set of results suggests that there is no unique solution for managing competence and that competence building should be thought in accordance with each population's characteristics and needs.

From an operational viewpoint, as our analyses of variance showed that Maintenance teams scored significantly lower on a number of variables, including those referring to competence, motivation, and professional evolution, we decided to give priority to this specific population for our first field interventions. Consistently, the next steps of our research are dedicated to a more detailed diagnosis for competence drivers at the individual and at the team level. On the basis of this specific diagnosis, we are designing custom interventions for each team to foster motivation and competence. Hence we expect to set out a competence development program based primarily on intrinsic motivation (behavioral and attitudinal predominance, self-accomplishment), identified motivation (meaningfulness at work, personal and corporate values, congruency building), and managerial inspiration through the development of transformational leadership. The final aim is to develop jointly individual wellbeing and corporate performance, in order to contribute to the company's missions and purpose in the service of society.

References

- Baartman, L.K.J. and De Bruijn, E. (2011) 'Integrating knowledge, skills and attitudes: Conceptualising learning processes towards vocational competence', *Educational Research Review*, 6(2), pp. 125–134. Available at: <https://doi.org/10.1016/j.edurev.2011.03.001>.
- Boshuizen, H.P. et al. (2003) 'Expertise development: The transition between school and work'.
- Deci, E.L., Olafsen, A.H. and Ryan, R.M. (2017) 'Self-determination theory in work organizations: The state of a science', *Annual review of organizational psychology and organizational behavior*, 4, pp. 19–43.
- Deci, E.L. and Ryan, R.M. (1985) 'Cognitive evaluation theory', in *Intrinsic motivation and self-determination in human behavior*. Springer, pp. 43–85.
- Deci, E.L. and Ryan, R.M. (2008) 'Self-determination theory: A macrotheory of human motivation, development, and health', *Canadian psychology/Psychologie canadienne*, 49(3), p. 182.
- Elliot, A.J., McGregor, H.A. and Thrash, T.M. (2002) 'The need for competence.'
- Fernagu-Oudet, S. (2018) *Organisation et apprentissage: des compétences aux capacités*. PhD Thesis. Université Bourgogne Franche-Comté.
- Gagné, M. and Deci, E.L. (2005) 'Self-determination theory and work motivation: SELF-DETERMINATION THEORY AND WORK MOTIVATION', *Journal of Organizational Behavior*, 26(4), pp. 331–362. Available at: <https://doi.org/10.1002/job.322>.
- Gick, M.L. and Holyoak, K.J. (1983) 'Schema induction and analogical transfer', *Cognitive psychology*, 15(1), pp. 1–38.
- Le Boterf, G. (2002) 'De quel concept de compétence avons-nous besoin', *Soins cadres*, 41, pp. 1–3.
- Le Boterf, G. (2008) 'Repenser la compétence', *Pour dépasser les idées reçues*, 15, pp. 978–2212547276.
- Le Boterf, G. (2018) *Développer et mettre en oeuvre la compétence: Comment investir dans le professionnalisme et les compétences*. Editions Eyrolles.
- Piaget, J. (1970) *Genetic epistemology*. Columbia University Press.
- Rigby, C.S. and Ryan, R.M. (2018) 'Self-determination theory in human resource development: New directions and practical considerations', *Advances in Developing Human Resources*, 20(2), pp. 133–147.
- Ryan, R.M. and Deci, E.L. (2000) 'Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions', *Contemporary Educational Psychology*, 25(1), pp. 54–67. Available at: <https://doi.org/10.1006/ceps.1999.1020>.
- Schon, D.A. (1983) *The reflective practitioner: How professionals think in action*. Basic Books New York.
- Singley, M.K. and Anderson, J.R. (1989) *The transfer of cognitive skill*. Harvard University Press (9).
- Vallerand, R.J. (2000) 'Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation', *Psychological inquiry*, 11(4), pp. 312–318.

Servant Leadership Knowledge Structures: A Bibliometric Review

Ghulam Kalsoom and Roman Zámečník

Faculty of Management and Economics, Tomas Bata University in Zlin, Czech Republic

kalsoo@utb.cz (Corresponding Author)

zamecnik@utb.cz

Abstract: Servant leadership is an emerging approach that appears timely debate for scientific progress in leadership research. There have been several qualitative, quantitative, and systematic reviews on servant leadership. Surprisingly, there needs to be more research using bibliometric analysis on servant leadership. For this reason, this study addresses methodological limitations by using a bibliometric review to analyze and visualize the historical background of servant leadership, its present state of knowledge structures and emerging trends. To do so, we included a sample of 214 peer-reviewed articles over the period 2004 to 2022 by using the Web of Science (WoS) database. The bibliometric analysis revealed three major clusters in servant leadership: (1) Servant leadership and innovativeness, (2) Servant leadership with employees' extra-role behaviours and personality traits, (3) Attitudinal and behavioural employee outcomes such as emotional labour and ethical followers. Significantly, our contribution recognizes more nuanced results than previously partially identified and highlights servant leadership research. This study also opens a fresh avenue for future scholars by providing future research questions.

Keywords: Servant leadership, Knowledge structures, Bibliometric review

1. Introduction

Leadership research has transitioned from a greater emphasis on transformational leadership to a collective, interpersonal, and broader perspective where leader-follower engagement is crucial (Avolio et al., 2009). With the market trend for even more moral, individual administration, servant leadership theory might be precisely what organizations require, and consideration for community has been an issue of terms and conditions (Van Dierendonck, 2011). According to a Forbes magazine survey, nearly one of America's top 100 organizations collaborate to exhibit or enhance servant leadership traits (Levering et al., 2000; Pekerti & Sendjaya, 2010).

For leadership scholars, servant leadership is displayed as a new area of study (Van Dierendonck, 2011). Academicians have been investigating the role of servant leaders on believers for an extended period, and they have consistently found positive results (Chen et al., 2015; Neubert et al., 2008). Nevertheless, people have become more interested in servant leadership in recent years (Heine et al., 2022; Kauppila et al., 2022). To prevent uncertainty in light of the various concepts that are accessible (Barbuto Jr & Wheeler, 2006; Liden et al., 2008; Van Dierendonck, 2011). Regardless of its antiquated beginnings, people continue to apply that same meaning of servant leadership. Subsequently, (Greenleaf, 1970) discussed servant leaders "place the needs of their subordinates before their own needs and centred their efforts on helping subordinates grow to reach their maximum potential and achieve optimal organizational and career success."

A prior literature reviews to highlight the essential questions in the servant leadership field. For example, (Van Dierendonck, 2011) conducted systematic review on brief overview of the development, key characteristics, and evaluation tools for servant leadership in relevant studies. A recent review explored antecedents and consequences on servant leadership (Langhof & Guldenberg, 2020). Similarly, another review examined as a holistic approach and focused on individual and team-level outcomes of servant leadership (Canavesi & Minelli, 2021). In addition, another meta-analysis focused on three leadership styles: authentic, ethical and servant leadership (Hoch et al., 2018).

The mainstream research on servant leadership is still very fragmented. Scholars investigate servant leadership from multiple standpoints, which adds to the field's dispersed state (Carter & Baghurst, 2014; Gui et al., 2021; Peachey et al., 2018). Despite the rising concern from both industry and scholars, the majority of scientific studies on servant leadership (SL) are still fairly limited (Parris & Peachey, 2013). Its actual value to businesses and workers is yet to be unveiled (Hunter et al., 2013). Numerous intellectuals reveal compelling arguments in support of cultivating and fostering investigation on servant leadership (Liden et al., 2014)

A call for more research is needed on servant leadership, a "promising new field of research" (Parris & Peachey, 2013). Another research contemplates servant leadership "at an early stage of theoretical development" (Liden et al., 2014). For this reason, there is a compelling need to conduct a bibliometric analysis of servant leadership. Importantly, Bibliometric analysis is still in its infancy in a business investigation and is frequently not utilized to its maximum potential. This happens when investigators only have access to a subset of available bibliometric data and methods, which is supposed to lead to a simplistic knowledge of the

topic (Brown et al., 2020). Surprisingly, servant leadership is a partially limited and under-researched field in existing literature (Kauppila et al., 2022).

2. Literature Review

2.1 Conceptualizing Servant Leadership

Greenleaf postulated that the servant leadership philosophy could be applied to organizations, not just its leaders. Greenleaf encouraged businesses to serve customers and society. Unlike other leadership styles, servant leadership incorporates society (Greenleaf, 1970). Although Greenleaf's pragmatic approach, relying on his long career, resonated with private industry managers, even though SL applies to all sectors (Hartmann, 2013).

More importantly, the notion of servant leadership can be traced back to the earliest days of the Bible, where seven different Greek words—*diakonos*, *doulos*, *huperetes*, *therapon*, *oiketes*, *sundoulos*, and *pais*—are used to refer to leaders in the capacity of "servanthood" (Getz, 1984). However, the theory of servant leadership has also been supplemented by other religious and non-religious concepts (Fry, 2003; Hicks, 2002). Similarly, Christianity, Islam, Judaism, Hinduism, and Buddhism are just a few examples of faiths that teach their believers the significance of "service" (Kurth, 2003) and ideologies that aren't based on any specific religion, like moral philosophy, Siddha yoga, and Taoism.

Given the above similarities, traditional literature indicates that servant leadership is about both doing and being a servant (Sendjaya & Sarros, 2002). For instance, leaders who adopt the role of a servant and the essence of a servant, as demonstrated by their full devotion to serving others, radiate a great sense of belief and character (Jaworski, 1998).

2.2 The Role of Servant Leadership at the Workplace

Previous research developed a multidimensional scale to assess servant leadership by using multi-level assessment (Liden et al., 2008). Leader-member exchange (LMX) shows leaders has good social relationships with their subordinates at the workplace as to create viable working culture, they also demonstrated attractive behaviours among their juniors (Graen & Uhl-Bien, 1995), the core idea of this LMX theory suggests leaders and followers are able to access the various benefits to build mature relationship. Their research revealed at the micro level, servant leadership continues to add something new to the discussion beyond transformative leaders and LMX whenever it pertains to explaining things such as society citizenship behaviours, in-role performance, and commitment to the organization. Importantly, their findings demonstrate that the concept of servant leadership has potential as a way to comprehend how leaders impact the actions and thoughts of their followers. Leadership research pointed at micro and macro levels separately (Dinh et al., 2014). Indeed, they examined the current theoretical trends and changing perspective on leadership at the workplace. Another research shows servant leaders influences employee behaviour and their creativity (Neubert et al., 2008). Servant leadership towards organizational citizenship behaviour though mediating effect of procedural justice climate and service climate (Walumbwa et al., 2010). They examined both employee-supervisor levels to get better understanding of both perspectives.

During the past couple of years, servant leadership and innovative work behaviour in the service sector have been investigated at the micro level from the employee point of view (Iqbal et al., 2020; Kül & Sönmez, 2021; Reslan et al., 2021; Zhu & Zhang, 2020). Conversely, few critical studies assessed servant leadership with organizational citizenship behaviour at the organizational level in non-profit organizations' context (Aboramadan et al., 2022; Neubert et al., 2008; Panaccio et al., 2015; Sun, 2013). In a systematic review, factors like agreeableness, extraversion, core self-evaluation, mindfulness, narcissism, and organizational identification were discovered to be significant predictors of servant leadership (Eva et al., 2019). Prior research examined servant leadership with team service, how well they do their jobs, and how an organization treats its citizens at team-level analysis in a manufacturing company (Chiniara & Bentein, 2018).

It has been suggested to conduct a bibliometric analysis on servant leadership to address the methodological gap (Eva et al., 2019). By doing so, this study attempts to highlight a research gap to conduct a bibliometric analysis to analyze and visualize the historical background of servant leadership, its present state of knowledge structures and emerging trends. Due to the recent interest in the subject, the outcomes of this bibliometric analysis will help progress the state of knowledge and point the way toward promising new avenues of investigation. For this reason, this review was done to answer the following questions:

RQ1: How servant leadership research is progressing in terms of citations, publications, most influential authors and articles?

RQ2: What are the gaps in the research stream of servant leadership which can lead towards future research questions?

3. Methodology

In the past few years, bibliometric analysis has witnessed a rapid rise in recognition in business research studies (Donthu et al., 2021). The bibliometric analysis has been carried out in several recent studies on leadership topics (Tal & Gordon, 2020; Zhao et al., 2022). Surprisingly, there is limited research on servant leadership using bibliometric analysis, and there is more need to analyze it to enrich the knowledge of servant leadership. This way, we used bibliometric analysis, and data were extracted from the Web of Science database (WoS). Indeed, the WoS database was used for its international reputation for quality research publications and double-blind peer-reviewed processes (Ramos-Rodríguez & Ruíz-Navarro, 2004).

We searched the keywords “*servant leadership*” in the “Social Science Citation Index” category, and the query generated 414 articles. After that, we used search criteria to limit it to only “article”, so we received 344 articles. Finally, we applied search criteria according to our field of “management”. Our final sample size was 214 peer-reviewed articles for bibliometric analysis. From the WoS database, four files were downloaded for further analysis (2 Microsoft Excel formats and 2 Tab Limited Text files). Microsoft Excel for descriptive analysis and VOS Viewer for bibliometric analysis (Van Eck & Waltman, 2010) were employed to analyse bibliometric data for the current study. First, citation and publication trends are presented to see how servant leadership research progresses. Secondly, most articles were identified. Thirdly, knowledge structures were generated using bibliographic coupling. Finally, future research questions were proposed.

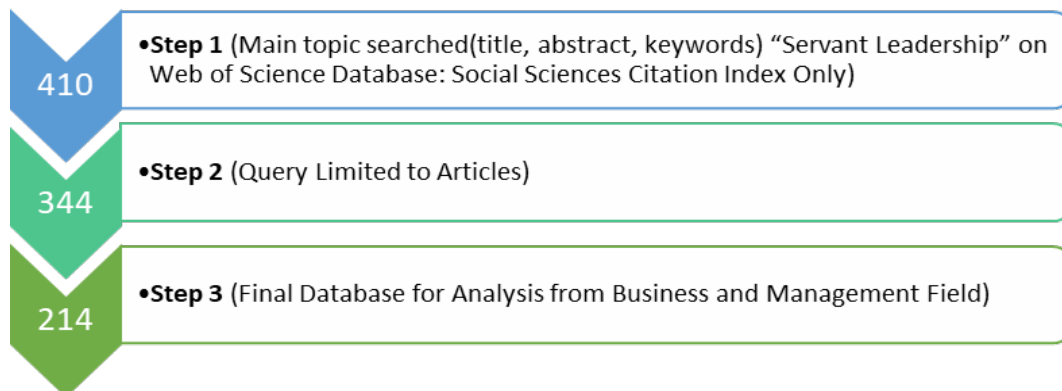


Figure 1: Process of Data Collection Source: authors based on data from Web of Science database

4. Results

The trend analysis on servant leadership shows in Figure.2. This trend indicates the present citation and publication status of servant leadership in the leadership field. Notably, servant leadership originated in this research stream in the year 2011. The trend shows a rapid rise in servant leadership studies from 2020 to 2021, and surprisingly, there is a gradual decline in the research on servant leadership in 2022.

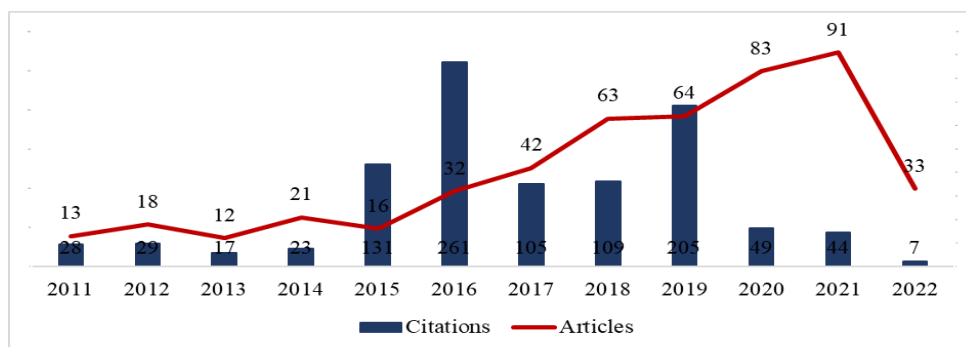


Figure 2: Servant Leadership-Citation and publication trends

Table 1: Earlier Reviews on Servant Leadership

Scholars	Method	Key findings	How this review is different?
Vogel et al. (2021)	Bibliometric (n=2390)	Three themes of Leadership Development (Leadership styles and seminal, Learning and elements of leadership and intra-person mechanisms)	Focused on literature, covered 2004 to 2022 with sample of 214 documents. Focused on measurement of servant leadership (SL) and key theories. Employed bibliometric analysis to identify publication, citation, most influential journals and bibliographic coupling, and future research questions. Using large number of sample 214 documents to provide a fresh look on SL at micro-macro and meso levels. Focused on antecedents and consequences of SL
Zhao et al. (2021)	Bibliometric (n=1432)	Seven Clusters were identified (i.e., board characteristics, responsible leadership, emerging country context, team efficacy, CEO pay fairness, shareholder wealth, and cross-sector social partnership)	
Bavik, (2020)	Systematic review (n=106)	Identified SL attributes (i.e., trust, integrity, honesty, care, servant behaviour, listening and community focus.	
Parris & Peachay, (2012)	Systematic review (n=39)	SL is a tenable theory. It is viable and valuable on an individual and an organization level.	
Lee et al. (2019)	Meta-analysis (n=130)	SL has incremental predictive validity on transformational, authentic and ethical leadership at individual-team-level behavioural outcomes.	

Source: authors based on data from WoS database

Table 2: Servant Leadership –Most influential authors

Author/Year	Aim	Citation	Journal and Ranking in ABS
Liden et al. (2008)	Scale development of Servant leadership	676	Leadership Quarterly (ABS:4)
Harrigan Jessica E. Dinh (2014)	Role of Leadership	537	Leadership Quarterly (ABS:4)
Nubert et al. (2008)	Servant leadership on employee behavior	417	Journal of Applied Psychology (ABS:3)
Walumbwa et al. (2010)	Servant leadership with organizational citizenship behavior	415	Journal of Applied Psychology (ABS:3)
Hoch et al. (2018)	Role of moral leadership styles	367	Journal of Management (ABS:4*)
Barbuto & Wheeler, (2006)	Scale development on servant leadership	366	Group and Organization Management (ABS:3)

Author/Year	Aim	Citation	Journal and Ranking in ABS
Liden et al. (2014)	Leader-follower behaviours	353	Academy of Management Journal (ABS:4*)
Dierendonck & Nuijten (2011)	Multidimensional scale on servant leadership	279	Journal of Business and Psychology (ABS:3)
Hu & Liden, (2011)	Servant leadership and team performance	254	Journal of Applied Psychology (ABS:3)
Hunter et al. (2013)	Servant leaders and followers	217	Leadership Quarterly (ABS:4)

Source: authors based on data from WoS database

4.1 Servant Leadership- Clusters

According to our bibliometric analysis of 214 studies on servant leadership (SL). SL has mostly been examined at the micro and macro levels such as employee and organizational levels of analysis (Searle & Barbuto Jr, 2011). There is a pressing need to view servant leadership at the institutional level, which scholars in the existing literature neglect. I developed three clusters on servant leadership after a constructive content analysis. Table 3 provides further details of those clusters.

4.2 Cluster 1- Servant Leadership and Innovativeness

Servant leadership pushes firms to adopt innovativeness in their working practices (Broch et al., 2020). Innovativeness is an essential for organizations to survive during cut-throat competition in the industry. A recent survey research found that technological leadership can be source of innovativeness and knowledge sharing at the workplace (Shaikh et al., 2023).

4.3 Cluster 2- Servant Leadership With Employees' Extra-Role Behaviours and Personality Traits

There is a corpus of research on servant leadership with personality traits in the workplace (Sun & Shang, 2019). Significantly, priors research shows that employees are motivated by engagement in servant leadership (Aboramadan et al., 2022). Emotional intelligence is a good personality trait for servant leadership to keep stability in the workplace. Importantly, extra-role behaviours lead to business excellence.

4.4 Cluster 2- Attitudinal and Behavioural Employee Outcomes Such as Emotional Labour, Ethical Followers

Emotion management is an emerging technique in the workplace for researchers. Previous research demonstrates that affective trust significantly impacts emotional labour more than cognitive trust regarding servant leadership (Lu et al., 2019). Servant leaders push employees to perform ethically in the workplace (Lemoine et al., 2019).

Table 3: Servant Leadership-Clusters

Cluster	Themes	Findings	Future Research	Sample Studies
Cluster 1 (86 studies) Servant leadership and innovativeness	Servant leadership, Innovativeness, Job autonomy	SL can promote IWB and Knowledge sharing through mediating effects of thriving and job autonomy	Cross country on Innovation	(Iqbal et al., 2020; Kül & Sönmez, 2021; Reslan et al., 2021; Zhu & Zhang, 2020)

Cluster	Themes	Findings	Future Research	Sample Studies
Cluster 2 (95 studies) Servant leadership with employees' extra-role behaviours and personality traits.	Organizational citizenship behaviour, Creativity, Personality traits	Servant leadership enhance employee extra-role behaviours and personality traits.	Servant leadership with employees' extra role behaviours and situational factors at team and organizational levels in different contexts.	(Aboramadan et al., 2022; Neubert et al., 2008; Panaccio et al., 2015; Sun, 2013)
Cluster 3 (33 studies) Attitudinal and behavioural employee outcomes such as emotional labour, ethical followers.	Employee Flourishing, Voice, Emotional Labour, Ethical Followers	Time-lagged data revealed emotional flourishing, emotional labour promotes team effectiveness among ethical followers	Triangulation to strengthen servant leadership through ethical followers in cross-country context	(Donia et al., 2016; Giolito et al., 2021; Lapointe & Vandenberghe, 2018; Lu et al., 2019)

Source: *n*=214 studies from Web of Science database

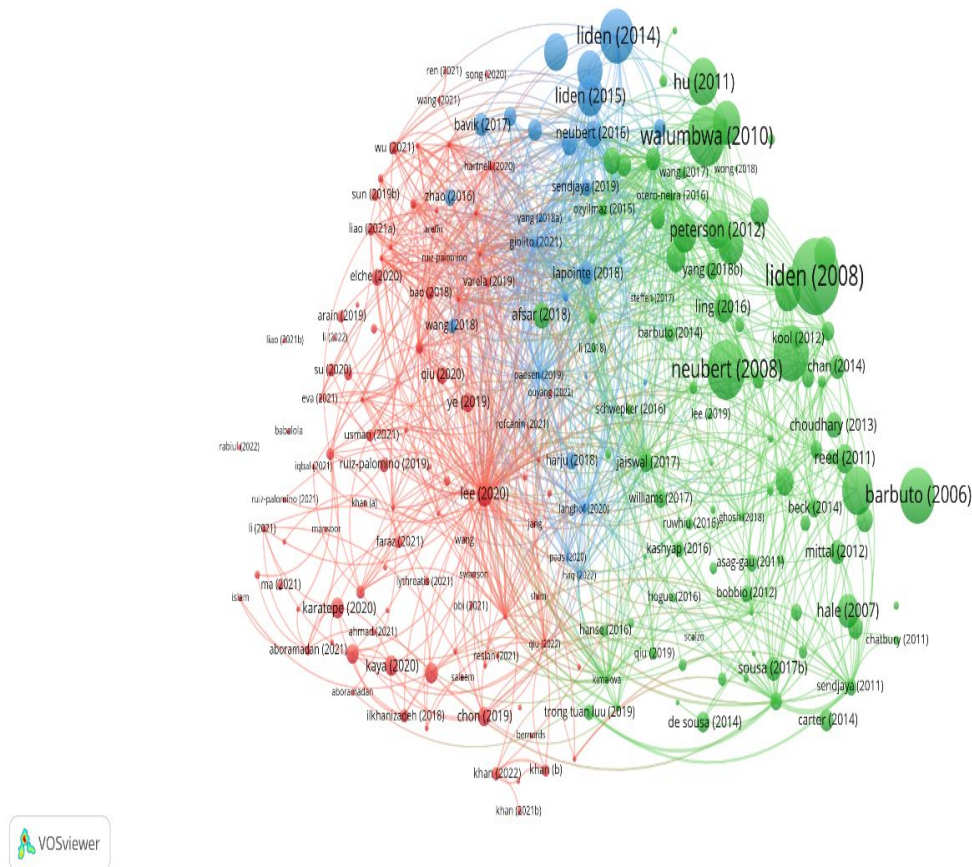


Figure 3: Bibliographic coupling for knowledge structures Source: authors based on data from VOS viewer software

5. Discussion

The present review aims to present a holistic view of servant leadership in the leadership field. Given the importance of conceptualization of servant leadership and its role for business excellence. This review examined 224 peer-reviewed articles. The results revealed innovation is an important field to be explore with servant leaders due to upcoming digital transformations and industry 5.0. Another interesting aspect personality traits of employees and servant leadership. Finally, this review found employee behaviours

considered a crucial for organizations to their development and training as per dynamic changes in the industry. This is limited only Web of Science database. Future scholars can use data from several database such as Scopus and Ebsco as get diverse outcomes.

6. Future Research Agenda

This bibliometric review provides a fresh avenue for future researchers to address a new aspects in the servant leadership domain. The table 4. Shows future research questions.

Table 4: Servant Leadership –Future Research Questions

Clusters	Future Research Questions
<i>Servant leadership and innovativeness</i>	How servant leadership foster and enhance innovativeness at the workplace?
	What is role of servant leadership in promoting culture of innovativeness in organization?
<i>Servant leadership with employees' extra-role behaviours and personality traits</i>	How servant leadership pushes employees' extra-role behaviours and personality traits for organizational effectiveness at multi-sector perspective?
	How does agreeableness and openness affect employee outcomes?
<i>Attitudinal and behavioural employee outcomes such as emotional labour, ethical followers</i>	Does attitudinal and behavioural employee outcomes promote ethical culture at individual, team and organizational levels?
	How servant leadership nurture ethical followers to engage and play their role at workplace?

Source: Own research

Acknowledgement

This work was funded under FaME TBU No. IGA/FaME/2023/012 “Closed and open innovation: role of human resource, servant leadership, digitalisation, and uncertainty.”

References

- Aboramadan, M., Hamid, Z., Kundi, Y. M., & El Hamalawi, E. (2022). The effect of servant leadership on employees' extra-role behaviors in NPOs: The role of work engagement. *Nonprofit Management and Leadership*.
- Avolio, B. J., Reichard, R. J., Hannah, S. T., Walumbwa, F. O., & Chan, A. (2009). A meta-analytic review of leadership impact research: Experimental and quasi-experimental studies. *The leadership quarterly*, 20(5), 764-784.
- Barbuto Jr, J. E., & Wheeler, D. W. (2006). Scale development and construct clarification of servant leadership. *Group & Organization Management*, 31(3), 300-326.
- Broch, F. F. M., Escrig, E. D., Gómez, R. C., & Alcamí, R. L. (2020). Promoting firm innovativeness through servant leadership and corporate social responsibility to employees. *Leadership & Organization Development Journal*.
- Brown, T., Park, A., & Pitt, L. (2020). A 60-year bibliographic review of the *Journal of Advertising Research*: Perspectives on trends in authorship, influences, and research impact. *Journal of Advertising Research*, 60(4), 353-360.
- Canavesi, A., & Minelli, E. (2021). Servant leadership: A systematic literature review and network analysis. *Employee Responsibilities and Rights Journal*, 1-23.
- Carter, D., & Baghurst, T. (2014). The Influence of Servant Leadership on Restaurant Employee Engagement [Article]. *Journal of Business Ethics*, 124(3), 453-464. <https://doi.org/10.1007/s10551-013-1882-0>

- Chen, Z., Zhu, J., & Zhou, M. (2015). How does a servant leader fuel the service fire? A multilevel model of servant leadership, individual self identity, group competition climate, and customer service performance. *Journal of Applied Psychology*, 100(2), 511.
- Chiniara, M., & Bentein, K. (2018). The servant leadership advantage: When perceiving low differentiation in leader-member relationship quality influences team cohesion, team task performance and service OCB. *The leadership quarterly*, 29(2), 333-345.
- Dinh, J. E., Lord, R. G., Gardner, W. L., Meuser, J. D., Liden, R. C., & Hu, J. (2014). Leadership theory and research in the new millennium: Current theoretical trends and changing perspectives. *The leadership quarterly*, 25(1), 36-62.
- Donia, M. B., Raja, U., Panaccio, A., & Wang, Z. (2016). Servant leadership and employee outcomes: The moderating role of subordinates' motives. *European Journal of Work and Organizational Psychology*, 25(5), 722-734.
- Donthu, N., Kumar, S., Pandey, N., & Gupta, P. (2021). Forty years of the International Journal of Information Management: A bibliometric analysis. *International Journal of Information Management*, 57, 102307.
- Eva, N., Robin, M., Sendjaya, S., Van Dierendonck, D., & Liden, R. C. (2019). Servant leadership: A systematic review and call for future research. *The leadership quarterly*, 30(1), 111-132.
- Fry, L. W. (2003). Toward a theory of spiritual leadership. *The leadership quarterly*, 14(6), 693-727.
- Getz, G. A. (1984). *Serving one another*. Chariot Victor Publishing.
- Giolito, V. J., Liden, R. C., van Dierendonck, D., & Cheung, G. W. (2021). Servant leadership influencing store-level profit: The mediating effect of employee flourishing. *Journal of Business Ethics*, 172(3), 503-524.
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The leadership quarterly*, 6(2), 219-247.
- Greenleaf, R. K. (1970). *The servant as leader*. Cambridge, Mass. Center for Applied Studies.
- Gui, C., Zhang, P., Zou, R., & Ouyang, X. (2021). Servant leadership in hospitality: A meta-analytic review. *Journal of Hospitality Marketing & Management*, 30(4), 438-458.
- Hartmann, M. (2013). *Servant leadership in diakonischen Unternehmen*. Kohlhammer Verlag.
- Heine, E. C., Stouten, J., & Liden, R. C. (2022). Providing Service During a Merger: The Role of Organizational Goal Clarity and Servant Leadership. *Journal of Business Ethics*, 1-21.
- Hicks, D. A. (2002). Spiritual and religious diversity in the workplace: Implications for leadership. *The leadership quarterly*, 13(4), 379-396.
- Hoch, J. E., Bommer, W. H., Dulebohn, J. H., & Wu, D. (2018). Do ethical, authentic, and servant leadership explain variance above and beyond transformational leadership? A meta-analysis. *Journal of Management*, 44(2), 501-529.
- Hunter, E. M., Neubert, M. J., Perry, S. J., Witt, L., Penney, L. M., & Weinberger, E. (2013). Servant leaders inspire servant followers: Antecedents and outcomes for employees and the organization. *The leadership quarterly*, 24(2), 316-331.
- Iqbal, A., Latif, K. F., & Ahmad, M. S. (2020). Servant leadership and employee innovative behaviour: exploring psychological pathways. *Leadership & Organization Development Journal*.
- Jaworski, J. (1998). *Destiny and the leader*. Insights on Leadership: Service, Stewardship, and Servant Leadership, 1(11).
- Kaupila, O.-P., Ehrnrooth, M., Mäkelä, K., Smale, A., Sumelius, J., & Vuorenmaa, H. (2022). Serving to help and helping to serve: using servant leadership to influence beyond supervisory relationships. *Journal of Management*, 48(3), 764-790.
- Kül, S., & Sönmez, B. (2021). The effect of nurse managers' servant leadership on nurses' innovative behaviors and job performances. *Leadership & Organization Development Journal*.
- Kurth, K. (2003). *Finding Meaning Through Serving*. Handbook of workplace spirituality and organizational performance. New York: ME Sharpe, 447-460.
- Langhof, J. G., & Guldenberg, S. (2020). Servant leadership: A systematic literature review—Toward a model of antecedents and outcomes. *German Journal of Human Resource Management*, 34(1), 32-68.
- Lapointe, E., & Vandenberghe, C. (2018). Examination of the relationships between servant leadership, organizational commitment, and voice and antisocial behaviors. *Journal of Business Ethics*, 148(1), 99-115.
- Lemoine, G. J., Hartnell, C. A., & Leroy, H. (2019). Taking stock of moral approaches to leadership: An integrative review of ethical, authentic, and servant leadership. *Academy of Management annals*, 13(1), 148-187.
- Levering, R., Moskowitz, M., & Garcia, F. (2000). The 100 best companies to work for. *FORTUNE-EUROPEAN EDITION*-, 141(1), 52-63.
- Liden, R. C., Wayne, S. J., Liao, C., & Meuser, J. D. (2014). Servant leadership and serving culture: Influence on individual and unit performance. *Academy of Management Journal*, 57(5), 1434-1452.
- Liden, R. C., Wayne, S. J., Zhao, H., & Henderson, D. (2008). Servant leadership: Development of a multidimensional measure and multi-level assessment. *The leadership quarterly*, 19(2), 161-177.
- Lu, J., Zhang, Z., & Jia, M. (2019). Does servant leadership affect employees' emotional labor? A social information-processing perspective. *Journal of Business Ethics*, 159(2), 507-518.
- Neubert, M. J., Kacmar, K. M., Carlson, D. S., Chonko, L. B., & Roberts, J. A. (2008). Regulatory focus as a mediator of the influence of initiating structure and servant leadership on employee behavior. *Journal of Applied Psychology*, 93(6), 1220.
- Panaccio, A., Henderson, D. J., Liden, R. C., Wayne, S. J., & Cao, X. (2015). Toward an understanding of when and why servant leadership accounts for employee extra-role behaviors. *Journal of Business and Psychology*, 30(4), 657-675.

- Parris, D. L., & Peachey, J. W. (2013). A systematic literature review of servant leadership theory in organizational contexts. *Journal of Business Ethics*, 113(3), 377-393.
- Peachey, J. W., Burton, L., Wells, J., & Chung, M. R. (2018). Exploring servant leadership and needs satisfaction in the sport for development and peace context. *Journal of Sport Management*, 32(2), 96-108.
- Pekerti, A. A., & Sendjaya, S. (2010). Exploring servant leadership across cultures: Comparative study in Australia and Indonesia. *The International Journal of Human Resource Management*, 21(5), 754-780.
- Ramos-Rodríguez, A. R., & Ruíz-Navarro, J. (2004). Changes in the intellectual structure of strategic management research: A bibliometric study of the *Strategic Management Journal*, 1980–2000. *Strategic management journal*, 25(10), 981-1004.
- Reslan, F. Y. B., Garanti, Z., & Emeagwali, O. L. (2021). The effect of servant leadership on innovative work behavior and employee knowledge sharing in the Latvian ICT sector. *Baltic Journal of Management*.
- Searle, T. P., & Barbutto Jr, J. E. (2011). Servant leadership, hope, and organizational virtuousness: A framework exploring positive micro and macro behaviors and performance impact. *Journal of leadership & organizational studies*, 18(1), 107-117.
- Sendjaya, S., & Sarros, J. C. (2002). Servant leadership: Its origin, development, and application in organizations. *Journal of leadership & organizational studies*, 9(2), 57-64.
- Shaikh, F., Afshan, G., Anwar, R. S., Abbas, Z., & Chana, K. A. (2023). Analyzing the impact of artificial intelligence on employee productivity: the mediating effect of knowledge sharing and well-being. *Asia Pacific Journal of Human Resources*.
- Sun, P., & Shang, S. (2019). Personality traits and personal values of servant leaders. *Leadership & Organization Development Journal*.
- Sun, P. Y. (2013). The servant identity: Influences on the cognition and behavior of servant leaders. *The leadership quarterly*, 24(4), 544-557.
- Tal, D., & Gordon, A. (2020). Leadership as an autonomous research field: a bibliometric analysis. *Society*, 57(5), 489-495.
- Van Dierendonck, D. (2011). Servant leadership: A review and synthesis. *Journal of Management*, 37(4), 1228-1261.
- Van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *scientometrics*, 84(2), 523-538.
- Walumbwa, F. O., Hartnell, C. A., & Oke, A. (2010). Servant leadership, procedural justice climate, service climate, employee attitudes, and organizational citizenship behavior: a cross-level investigation. *Journal of Applied Psychology*, 95(3), 517.
- Zhao, L., Yang, M. M., Wang, Z., & Michelson, G. (2022). Trends in the dynamic evolution of corporate social responsibility and leadership: A literature review and bibliometric analysis. *Journal of Business Ethics*, 1-23.
- Zhu, C., & Zhang, F. (2020). How does servant leadership fuel employee innovative behavior? A moderated mediation framework. *Asia Pacific Journal of Human Resources*, 58(3), 356-377.

Unveiling the Mediating Nexus of Digital Transformation on Digital Leadership and Enterprise Performance in Manufacturing Firms

Takyi Kwabena Nsiah and Beata Gavurova

Department of Applied Economics, Faculty of Economics and Management, Tomas Bata University in Zlin, Czech Republic

takyi@utb.cz

gavurova@utb.cz

Abstract: In today's rapidly evolving business landscape, digital transformation has become an imperative for organizations seeking to stay competitive and relevant. The relentless advancement of technology has brought about unprecedented opportunities and challenges, necessitating a shift in leadership paradigms to embrace the digital era fully. This investigation seeks to test the nexus between digital leadership, digital transformation, and enterprise performance. Empirically, the Smart PLS approach was employed to test the affiliation between digital leadership and enterprise performance, through the mediating effect of digital transformation. We collected data on manufacturing firms consisting of 471 managers across the various regions of Ghana. The finding indicates that digital leadership and digital transformation exhibit a positive affiliation with enterprise performance. Finally, digital transformation had a favorable mediating effect on the nexus between digital leadership and enterprise performance. Practitioners and firms would be motivated to seize the advantages of digital transformation as an opportunity to improve firm performance. Again, manufacturing firms that want to be leaders in the digital space have to acquire the services of a digital leader as part of their management portfolio team. This study contributes to the literature by providing new theoretical explanations for the inconsistent affiliation between digital leadership, digital transformation, and enterprise performance. This investigation also assists enterprises in reevaluating their digital strategies.

Keywords: Digital leadership, Digital transformation, Enterprise performance, Manufacturing enterprise

1. Introduction

In the face of the rapidly evolving business landscape, characterized by advancements in technology and shifting customer expectations, digital transformation has emerged as a crucial strategic imperative for organizations worldwide (Teece, 2019). The manufacturing sector, in particular, faces the pressing need to harness the power of digital technologies to stay competitive, enhance operational efficiency, and drive business growth (Chiarini, 2021). As a result, organizational leaders are increasingly adopting the role of "digital leadership" to navigate the complexities of the digital era and foster innovation and adaptability within their firms.

Digital leadership is the ability of organizational leaders to envision, execute, and sustain effective digital strategies that harness the potential of technology to drive innovation, agility, and customer-centricity (Abbu *et al.*, 2022). As more organizations recognize the strategic importance of digital leadership, scholars and practitioners have increasingly investigated its influence on various aspects of organizational performance (Klus and Müller, 2021) digital leader in current organizational challenges, (Quaquebeke and Gerpott, 2023), the now, new, and next DIGIL, and (Fatima and Masood, 2023) digital leadership and open innovation.

Organizational performance, often viewed through financial metrics, market share, and customer satisfaction, is a key determinant of an organization's overall success and growth. Scholars have shown a keen interest in understanding the factors that positively impact organizational performance, and digital leadership's role in this context has gained considerable attention. Shin, Mollah and Choi (2023) explored the effect of DIGIL on DIGI culture and employee DIGI capability affiliated with organizational performance. Similarly, eight European oil and gas enterprises corporate transformation and digitalization were investigated by (Fernandez-Vidal *et al.*, 2022). The results demonstrated that organizations select combinations of small transformation strategies to accomplish large digital transformation goals.

Moreover, the journey towards digital transformation has its complexities, and simply adopting digital technologies does not guarantee success (Marcon, Le Dain and Frank, 2022). To ensure a successful transition, organizations need to manage the interplay between digital leadership and digital transformation effectively (Zhuo and Chen, 2023). This raises an intriguing question: does digital transformation play a mediating role in the relationship between digital leadership and organizational performance?

1.1 Research Contribution and Implications

This research intends to contribute valuable insights to both academia and practice by untangling the intricate dynamics between digital leadership, digital transformation, and organizational performance. By substantiating

the mediating role of digital transformation, we aim to provide a comprehensive understanding of how organizations can optimize their digital leadership strategies to achieve sustainable success in the digital age.

Furthermore, our findings can offer practical guidance to organizational leaders seeking to navigate the complexities of digital transformation effectively. Understanding the mediating role of digital transformation will enable leaders to design more targeted and impactful digital strategies, leading to enhanced performance and competitiveness.

2. Literature Review

2.1 Digital Leadership and Digital Transformation Nexus

Digital leadership encompasses the ability of organizational leaders to envision, implement, and sustain effective digital strategies that leverage technology to transform their organizations (Carranza, Bustamante and Peiró, 2022). Successful digital leadership not only involves technology adoption but also necessitates the development of a digital-savvy culture, where employees embrace digital tools to enhance productivity and collaboration (Pham and Vu, 2022). Zulu and Khosrowshahi (2021) explored the taxonomy of DIGIL in the construction sector. The investigation was carried out at 41 institutions in the construction sector. The primary result was a taxonomy of digital leadership types classified according to six key areas: proactive and forward-thinking leaders; supportive leaders; leaders who lack coordination or caution; leaders who are reluctant to change; and leaders who lack vision and motivation. Klus and Müller (2021) indicate the need for "hiring new CEOs with excellent self-organization and IT abilities, a strong capacity to drive others, and a profound ability to think and act entrepreneurially." Wasono Mihadjo and Rukmana (2018) looked at 88 managers in Indonesian telecommunications companies to analyze the effect DIGIL has on agility. The findings suggest that DIGIL has an effect on alliance capability, dynamic capability, and market orientation, demonstrating that managers and businesses with an adaptable culture and behavior that are sensitive to the market and customers produce value for both parties. The tension for industries to adjust to the changing digital environment has caused institutions to employ DIGIL to transform their organizations to meet the competition era. The first hypothesis was that.

Hypothesis 1: DIGIL positively influences DIGIT.

2.2 Digital Leadership and Enterprise Performance Nexus

A company's digital strategy and business environment can benefit from having strong digital leadership. Benitez et al., (2022). Notably, digital leadership involves adopting novel ideas that advance digital development in areas including hiring, market entry, product commercialization, knowledge acquisition, and the strategic deployment of the company's IT assets to improve business outcomes (Davison, Wong and Peng, 2023). Fatima and Masood (2023) explored DIGIL on innovation within telecom and IT institutions. The results from the analysis of 250 employees indicate that top management knowledge sharing had a favorable impact on open innovation through DIGIL. In South Korea, (Shin, Mollah and Choi, 2023) gathered data on 149 employees and employed the structural equation approach to analyze the affiliation. The results demonstrated that DIGIL had a positive direct and indirect influence on organizational performance. (Tagscherer and Carbon, 2023) conducted a literary work on external and internal ways to digitalization. The study consists of both systematic and meta-analysis methodologies based on the reverse logistics model. The results depicted that the gap in research is in the areas of digitalization and particularly digital leadership. Chatterjee et al., (2023) investigated the moderating influence of digital leadership capabilities on employing workplace performance and efficiency. The results from the PLS analysis illustrated that 335 respondents confirmed a positive moderating effect of DIGIL capability on workplace performance and enterprise efficiency. From the above literary work, the hypothesis on the affiliation between DIGIL and performance was developed.

Hypothesis 2: DIGIL positively influences ENTP.

2.3 Digital Transformation and Mediation Nexus

The term "digital transformation" is used to describe how people and organizations are adapting to take use of digital technology to provide substantial benefits for their operations, customers' experiences, and business models (Abdulquadi et al., 2021). The term "digital transformation" is defined more narrowly in (Vial, 2021). To be more specific, digital transformation is the process of enhancing something by drastically altering its characteristics via the application of various forms of information, computer, communication, and networking technology. Bhatia (2021) research on the DIGIT within the Indian manufacturing sector. The results from the PLS outcome demonstrated that IT, institutional mindfulness, strategic alignment, and competition pressures had a favorable effect on DIGIT as a mediation construct. In the context of Tunisia, (Chouaibi et al., 2022)

explored the affiliation between DIGIT and ENTP in 270 enterprises through a linear regression approach. The results demonstrated that DIGIT had a material effect on organizational efficiency. Masoud and Basahel (2023) analyzed DIGIT and efficiency, considering the influence of IT innovation and customer experience in Saudi Arabia. Within the service industry, 164 data was collected, findings illustrated that DIGIT had a significant effect on organizational performance. The importance of DIGIT to improve organizational performance and competitiveness has led to a surge in interest in the correlation between digital transformation and business results in recent years. Organizational performance is predicted to improve for those that undertake digital transformation successfully.

Hypothesis 3: DIGIT positively influences ENTP.

Hypothesis 3a: DIGIT mediates the affiliation between DIGIL and ENTP.

2.4 Conceptual Framework Development

While the direct effects of digital leadership and digital transformation are well-established, we propose that the nexus between digital leadership and organizational performance is further strengthened through the mediating effect of digital transformation. In other words, digital transformation acts as a conduit through which the positive impacts of digital leadership are translated into tangible improvements in organizational performance (Wasono Mihardjo and Rukmana, 2018) argued that digital technology may provide instantaneous two-way contact between businesses and their consumers or staff. It has the potential to make businesses watch how they're perceived by the public.

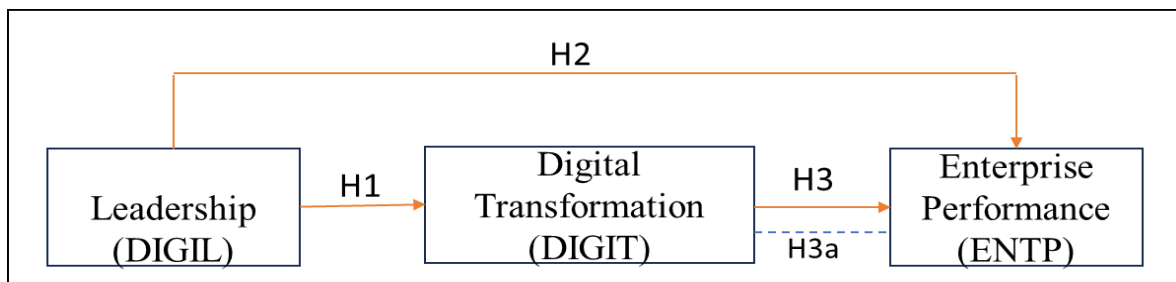


Figure 1: Conceptual model

3. Methodology

3.1 Data Collection, Sampling, and Analysis

To achieve the research objective, a mixed-methods approach was employed, with a focus on data collection from manufacturing firms operating in diverse regions. Quantitative data was gathered through surveys distributed to key stakeholders, including managers and decision makers. The survey will capture insights into digital leadership practices, the extent of digital transformation initiatives, and enterprise performance metrics. The qualitative component will involve in-depth interviews with select organizational leaders to gain a deeper understanding of their digital transformation journey, the role of digital leadership in driving transformational efforts, and the observed impacts on enterprise performance. The final sample consists of 471 managers. The sample size was determined based on statistical power analysis to ensure an adequate number of respondents for robust analysis. To ensure the validity and reliability of the measurement indicators, a pilot check was conducted with a small subset of respondents from the target population. The pilot test assesses the clarity, comprehensibility, and relevance of the survey items. Necessary adjustments were made based on feedback and psychometric properties were evaluated employing statistical techniques such as factor analysis and reliability analysis. All research procedures were conducted in accordance with the highest standards of ethics. Participants gave their informed consent, guaranteeing their privacy and safety. All information was kept confidential and was utilized for academic inquiry alone. Male 293 and the remaining accounted for female. All respondents have master's education and more than 7 years of experience. To examine these hypotheses, we employed PLS-SEM implemented in Smart PLS 3.3.5. PLS-SEM is commonly used in management research (Bhatia, 2021; Aftab et al., 2022) and it is well-suited to both straightforward and complex models (Hair, Howard and Nitzl, 2020). PLS-SEM provides a number of options for determining a scale's validity and reliability. For instance, you can use factor loading to verify the dependability of each survey question. The minimum acceptable item loading, as indicated by (Hair, Howard and Nitzl, 2020), is 0.5.

3.2 Measurement of Variables

The survey includes both five Likert scale items and demographic questions to gather background information. The measuring items for DIGIL are comprised of five dimensions (DIGIL1- DIGIL5). Again, DIGIT consists of five items (DIGIT1–DIGIT5), and enterprise performance adopted five constructs (ENTP1-ENTP5).

measurement model		
Variables	Definition	sources
Digital transformation	DIGIT 1 (0.809)- In our company, we aim to digitalize everything that can be digitized	(Abdulquadri <i>et al.</i> , 2021; Gong and Ribiere, 2021; Masoud and Basahel, 2023)
	DIGIT 2 (0.859) - In our company, we collect massive volumes of data from different sources	
	DIGIT 3 (0.908) - In our company, we aim to create stronger networking between the different business processes with digital technologies	
	DIGIT 4 (0.821) - In our company, we aim to enhance an efficient customer interface with digitality	
	DIGIT 5 (0.759) - In our company, we aim at achieving information exchange with digitality	
Digital Leadership	DIGIL 1 (0.871) - I can make others enthusiastic about the digital transformation.	(Abbu <i>et al.</i> , 2022; Shin, Mollah and Choi, 2023)
	DIGIL 2 (0.881) - I have a clear idea of the structures and processes that are needed for the digital transformation.	
	DIGIL 3 I would say I am a digital expert	
	DIGIL 4 (0.924) - I am driving the digital transformation forward proactively in our unit.	
	DIGIL 5 (0.896) - When it comes to digital knowledge, I am always up to date	
Enterprise performance	ENTP 1 (0.857) - Profitability	(Park, & and 2020, 2020; Wang and Liu, 2022)
	ENTP 2 (0.915) - Net profit margin	
	ENTP 3 (0.896) - Profitability growth	
	ENTP 4 (0.896) - Sales performance	
	ENTP 5 (0.881) - Overall performance.	

3.3 Measurement Model

Digital leadership, digital transformation, and enterprise performance were among the characteristics examined to determine their validity and dependability. Cronbach's alpha, rho A, composite reliability, and the average variance extract were used to determine the consistency of each variable (AVE). The data analysis showed that each of the variables was highly reliable. The reliability coefficients, measured by Cronbach's alpha, were quite high, ranging from 0.888 to 0.936. The range of Rho A values, from 0.894 to 0.938, demonstrates the consistency of the data. When compared to the recommended threshold of 0.7, which indicates good dependability, the composite reliability ratings ranged from 0.918 to 0.952. Furthermore, the AVE values were above 0.5, showing convergent validity, ranging from 0.693 to 0.797. The high reliability scores for each construct indicate that the items used to test that construct reliably capture the intended concept. Meaningful associations and consequences for DIGIL, DIGIT, and ENTP can now be evaluated with the help of the study's reliable variables.

3.4 Empirical Results

Table 1: Measurement of validity and reliability

Variables	Proxy	Cronbach's alpha	Rho_A	Composite reliability	Average variance extract
Enterprise performance	ENTP	0.934	0.938	0.950	0.797

Variables	Proxy	Cronbach's alpha	Rho_A	Composite reliability	Average variance extract
Digital transformation	DIGIT	0.888	0.894	0.918	0.693
Digital Leadership	DIGIL	0.936	0.938	0.952	0.791

3.5 Discriminant Validity

Discriminant validity is an essential aspect of construct validity that ensures that the measures of different constructs are distinct from each other. It demonstrates that the variables under study are measuring unique aspects of the underlying concepts and are not simply redundant or measuring the same underlying construct. In Table 2, correlation between DIGIL and DIGIT is 0.893, which is slightly lower than the square root of AVE for both variables (0.894 for DIGIL and 0.832 for DIGIT). This indicates good discriminant validity, suggesting that DIGIL and DIGIT are measuring distinct constructs. The correlation between DIGIL and ENTP is 0.637, which is lower than the square root of AVE for both variables (0.894 for DIGIL and 0.892 for ENTP). This finding supports the discriminant validity between DIGIL and ENTP, indicating that they are measuring different constructs. The correlation between DIGIT and ENTP is 0.763, which is lower than the square root of AVE for both variables (0.832 for DIGIT and 0.892 for ENTP). This suggests good discriminant validity between DIGIT and ENTP, indicating that they are distinct constructs.

Table 2: Discriminant validity

	DIGIL	DIGIT	ENTP
DIGIL	0.893		
DIGIT	0.827	0.833	
ENTP	0.637	0.763	0.889

3.6 Model Fitness

Several fitness measures are compared to determine the overall fitness of a model. As a result, we also computed the RMSEA, GFI, CFI, and IFI in addition to the CMIN/df. Table 3 displays the median and minimum values for each index. It can be concluded that the measurement model is fit because all of the estimated values of the indices fall inside the threshold limit. Therefore, it was concluded that the measurement model was satisfactory, and it was anticipated that the SEM results would likewise be satisfactory.

Table 3: Model fitness

	CMIN/DF	RMSEA	IFI	CFI	GFI
Decision value	≤ 3	≤ 0.08	≥ 0.90	≥ 0.90	≥ 0.80
Obtained value	1.352	0.077	0.958	0.934	0.864

3.7 Assessment of R Square

The research used R^2 as a measure of the model's predictive accuracy. Employing the PLS algorithm used in Smart-PLS, we were able to determine the R^2 of this model. All the results appear to be greater than 0.10, as that seems to be the cutoff level (Falk and Miller, 1992). DIGIT's R^2 is 0.0684, while the overall performance is 0.583. These numbers are far higher than the cutoff (0.10). In our model, the Q^2 values of all endogenous constructs are well above 0.25, indicating good predictive power.

Table 4: Assessment of R square and Q square

	R square	Q^2
ENTP	0.583	0.457
DIGIT	0.684	0.456

3.8 Hypothesis Assessment and Discussions

Table IV presents the results of the direct and indirect effects between the variables Digital Leadership (DIGIL), Digital Transformation (DIGIT), and Enterprise Performance (ENTP). The table provides the estimates, standard deviations, t-statistics, and p-values. The path coefficient from DIGIL to ENTP (**H1**) has a favorable affiliation with

an estimated value of 0.827 and t- value of 41.549 demonstrating that the estimate is highly reliable. The statistical material effect is demonstrated in the p value of 0.000.

On the part of the nexus between DIGIL and ENTP (**H2**) was found to be insignificant with a Coeff value of 0.018 and t value of 0.292. This is confirmed with a value of 0.771. There is a weak association between DIGIL to ENTP.

Again, the path from DIGIT to ENTP (**H3**) has a positive and significant direct effect with an estimate of 0.748. The t-statistic of 13.679 indicates high reliability, and the p-value of 0.000 confirms the statistical significance. Therefore, there is strong evidence to support the inference that Digital Transformation has a positive and significant direct effect on Enterprise Performance.

Finally, the mediating affiliation of DIGIT on DIGIL and ENTP (**H3a**) was analyzed. The findings demonstrated that there exists a mediating effect DIGIT on the variables. The mediating effect confirms that though DIGIL had no direct correlation with ENTP when DIGIT was introduced as a mediating effect the impact was improved. The findings support the works of (Abdulquadri *et al.*, 2021) investigation in Nigeria which indicated that digital transformation improve customer engagement and efficiency. Similarly, (Bhatia, 2021) investigation confirm a DIGIT mediating affiliation between the dimension of transformation and enterprise performance.

Table 5: Direct effect and indirect

Path	Original sample	Std.Dev.	t-statis	p-value	Conclusion
DIGIL->DIGIT	0.827	0.020	41.760	0.000	Agreed
DIGIL->ENTP	0.018	0.063	0.292	0.771	Disagreed
DIGIT->ENTP	0.748	0.054	13.679	0.000	Agreed
DIGIL->DIGIT ->ENTP	0.619	0.041	14.948	0.000	Agreed

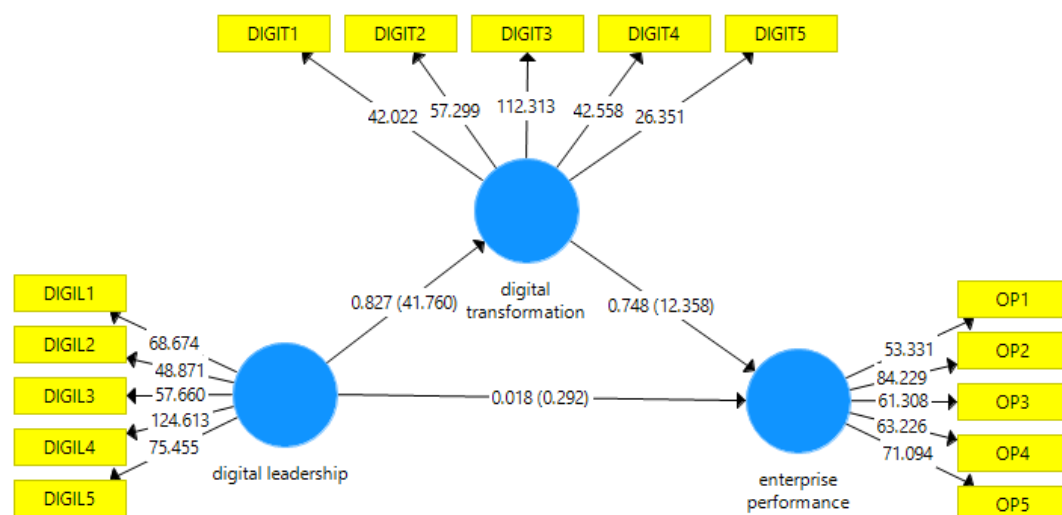


Figure 2: Structural model

4. Conclusion, Managerial Implication, and Limitations of the Research

The purpose of this investigation was to explore the affiliation between digital leadership and enterprise performance, through the mediating influence of digital transformation. The study consisted of manufacturing enterprises in Ghana an emerging nation. A total of 471 respondents responded to the distributed questionnaire. The respondents were selected based on their position and knowledge of digitalization. To achieve the developed hypothesis, the Smart PLS 3 was employed. The findings demonstrated that DIGIL had a significant effect on DIGIT. Similarly, DIGIT had a material affiliation with ENTP. However, DIGIL had an immaterial direct

link with ENTP. This was corrected when DIGIT was set as a mediating construction on the association between the two variables. The outcome of this investigation has shed enough light on DIGIL, DIGIT, ENTP within the manufacturing sectors of Ghana an emerging state. The report also makes some managerial suggestions and ramifications for businesses who are looking to create digital leadership and digital transformation plans to improve their performance.

5. Managerial Policy

This research fills in the gaps left by the few existing studies on the connections between digital leadership and the successful digital transformation of businesses. The study's empirical findings confirmed that digital transformation opens up several performance-enhancing options for businesses. Therefore, SMEs' managers should put money into various DIGITS and DIGIL that might boost productivity. For the simple reason that a company's entire operation can benefit from digital leadership's efforts to convert digitality into value. Managers that are thinking about embracing digital transformation should look into how it will work with their existing infrastructure to boost productivity, according to the results of this study. While many businesses may be able to adopt digitalization, capitalizing on the resulting potential to boost internal and external performance will likely depend on the availability of technologies designed to assist with, rather than replace, existing firm strategy.

6. Limitations and Further Research

There are gaps in this study that present chances to encourage further investigation. First, an in-depth study of the data to uncover the necessary techniques in the digital processes may be jeopardized by cross-sectional data and a lack of longitudinal data. Second, there is a risk of bias and limited generalizability if data are collected from a particular nation (Ghana) and analyzed based on management perceptions. Research in many nations and with varied responders from various company departments are both viable options for future investigations.

Acknowledgements

This paper was supported by IGA/FaME/2023/010: Digitization of the CRM process and its impact on brand image: A comparative study in Europe, Asia, and Africa.

References

- Abbu, H. *et al.* (2022) 'Measuring the Human Dimensions of Digital Leadership for Successful Digital Transformation: Digital leaders can use the authors' Digital Leadership Scale to assess their own readiness and ability to accelerate digital transformation.', *Research Technology Management*, 65(3), pp. 39–49. Available at: <https://doi.org/10.1080/08956308.2022.2048588>.
- Abdulquadri, A. *et al.* (2021) 'Digital transformation in financial services provision: a Nigerian perspective to the adoption of chatbot', *Journal of Enterprising Communities*, 15(2), pp. 258–281. Available at: <https://doi.org/10.1108/JEC-06-2020-0126/FULL/PDF>.
- Aftab, J. *et al.* (2022) 'Does CSR mediate the nexus of ethical leadership and employee's job performance? Evidence from North Italy SMEs', *Social Responsibility Journal*, 18(1), pp. 154–177. Available at: <https://doi.org/10.1108/SRJ-09-2020-0393>.
- Benitez, J. *et al.* (2022) 'Impact of digital leadership capability on innovation performance: The role of platform digitization capability', *Information and Management*, 59(2). Available at: <https://doi.org/10.1016/j.im.2022.103590>.
- Bhatia, M.S. (2021) 'Green process innovation and operational performance: The role of proactive environment strategy, technological capabilities, and organizational learning', *Business Strategy and the Environment*, 30(7), pp. 2845–2857. Available at: <https://doi.org/10.1002/bse.2775>.
- Carranza, C.C.J., Bustamante, M.C.A. and Peiró, J.M. (2022) 'Sistematic Review of Empirical Studies in E-Leadership', *Universitas Psychologica*, 20. Available at: <https://doi.org/10.11144/Javeriana.upsy20.rvee>.
- Chatterjee, S. *et al.* (2023) 'Digital workplace and organization performance: Moderating role of digital leadership capability', *Journal of Innovation & Knowledge*, 8(1), p. 100334. Available at: <https://doi.org/10.1016/j.jik.2023.100334>.
- Chiaroni, A. (2021) 'Industry 4.0 technologies in the manufacturing sector: Are we sure they are all relevant for environmental performance?', *Business Strategy and the Environment*, 30(7), pp. 3194–3207. Available at: <https://doi.org/10.1002/BSE.2797>.
- Chouaibi, S. *et al.* (2022) 'The risky impact of digital transformation on organizational performance – evidence from Tunisia', *Technological Forecasting and Social Change*, 178. Available at: <https://doi.org/10.1016/j.techfore.2022.121571>.
- Davison, R.M., Wong, L.H. and Peng, J. (2023) 'The art of digital transformation as crafted by a chief digital officer', *International Journal of Information Management*, 69. Available at: <https://doi.org/10.1016/j.ijinfomgt.2022.102617>.

- Fatima, T. and Masood, A. (2023) 'Impact of digital leadership on open innovation: a moderating serial mediation model', *Journal of Knowledge Management* [Preprint]. Available at: <https://doi.org/10.1108/JKM-11-2022-0872>.
- Fernandez-Vidal, J. et al. (2022) 'Digitalization and corporate transformation: The case of European oil & gas firms', *Technological Forecasting and Social Change*, 174. Available at: <https://doi.org/10.1016/j.techfore.2021.121293>.
- Gong, C. and Ribiere, V. (2021) 'Developing a unified definition of digital transformation', *Technovation*, 102. Available at: <https://doi.org/10.1016/j.technovation.2020.102217>.
- Hair, J.F., Howard, M.C. and Nitzl, C. (2020) 'Assessing measurement model quality in PLS-SEM using confirmatory composite analysis', *Journal of Business Research*, 109, pp. 101–110. Available at: <https://doi.org/10.1016/j.jbusres.2019.11.069>.
- Klus, M.F. and Müller, J. (2021) 'The digital leader: what one needs to master today's organisational challenges', *Journal of Business Economics*, 91(8), pp. 1189–1223. Available at: <https://doi.org/10.1007/s11573-021-01040-1>.
- Marcon, É., Le Dain, M.A. and Frank, A.G. (2022) 'Designing business models for Industry 4.0 technologies provision: Changes in business dimensions through digital transformation', *Technological Forecasting and Social Change*, 185. Available at: <https://doi.org/10.1016/j.techfore.2022.122078>.
- Masoud, R. and Basahel, S. (2023) 'The Effects of Digital Transformation on Firm Performance: The Role of Customer Experience and IT Innovation', *Digital*, 3(2), pp. 109–126. Available at: <https://www.mdpi.com/2673-6470/3/2/8> (Accessed: 3 August 2023).
- Park, B., and S.X.-I.S. M. (2020) 'Is exploring dynamic capabilities important for the performance of emerging market firms? The moderating effects of entrepreneurial orientation and environmental', *International Studies of Management and Organization*, 50(1), pp. 57–73. Available at: <https://doi.org/10.1080/00208825.2019.1703378>.
- Pham, H.Q. and Vu, P.K. (2022) 'Unravelling the Potential of Digital Servitization in Sustainability-Oriented Organizational Performance—Does Digital Leadership Make It Different?', *Economies*, 10(8). Available at: <https://doi.org/10.3390/economies10080185>.
- Quaquebeke, N. Van and Gerpott, F.H. (2023) 'The Now, New, and Next of Digital Leadership: How Artificial Intelligence (AI) Will Take Over and Change Leadership as We Know It', *Journal of Leadership and Organizational Studies* [Preprint]. SAGE Publications Inc. Available at: <https://doi.org/10.1177/15480518231181731>.
- Shin, J., Mollah, M.A. and Choi, J. (2023) 'Sustainability and Organizational Performance in South Korea: The Effect of Digital Leadership on Digital Culture and Employees' Digital Capabilities', *Sustainability (Switzerland)*, 15(3). Available at: <https://doi.org/10.3390/su15032027>.
- Tagscherer, F. and Carbon, C.-C. (2023) 'Leadership for successful digitalization: A literature review on companies' internal and external aspects of digitalization', *Sustainable Technology and Entrepreneurship*, 2(2), p. 100039. Available at: <https://doi.org/10.1016/j.stae.2023.100039>.
- Teece, D.J. (2019) 'Fundamental Issues in Strategy', *Strategic Management Review*, pp. 1–45.
- Vial, G. (2021) 'Understanding digital transformation', *Managing Digital Transformation*, pp. 13–66. Available at: <https://doi.org/10.4324/9781003008637-4/UNDERSTANDING-DIGITAL-TRANSFORMATION-GREGORY-VIAL>.
- Wang, M. and Liu, Z. (2022) 'How Do Green Innovation Strategies Contribute to Firm Performance Under Supply Chain Risk? Evidence From China's Manufacturing Sector', *Frontiers in Psychology*, 13. Available at: <https://doi.org/10.3389/FPSYG.2022.894766>.
- Wasono Mihadjo, L.W. and Rukmana, R.A. (2018) 'Does Digital Leadership Impact Directly or Indirectly on Dynamic Capability: Case on Indonesia Telecommunication Industry in Digital Transformation?', *The Journal of Social Sciences Research ISSN*, (2), pp. 832–841. Available at: <https://doi.org/10.32861/jssr.spi2.832.841>.
- Zhuo, C. and Chen, J. (2023) 'Can digital transformation overcome the enterprise innovation dilemma: Effect, mechanism and effective boundary', *Technological Forecasting and Social Change*, 190. Available at: <https://doi.org/10.1016/j.techfore.2023.122378>.
- Zulu, S.L. and Khosrowshahi, F. (2021) 'A taxonomy of digital leadership in the construction industry', *Construction Management and Economics*, 39(7), pp. 565–578. Available at: <https://doi.org/10.1080/01446193.2021.1930080>.

Identity of Vocational Education and Training Teacher: Pathways and Competences

Peter Marinič

Masaryk University, Faculty of Education, Brno, Czech Republic

marinic@ped.muni.cz

Abstract: A teacher's identity can be understood as comprehensive approach to the self-concept of the teacher and the teacher's external environment. The teacher's identity already begins to form during the teacher's preparation for the future teaching profession. The requirements about necessary education and requested competences for the teaching profession are usually set by the state institution such as Ministry of Education. Even though the current conditions for becoming a vocational education and training (VET) teacher are relatively strict, in practice there are teachers in secondary vocational schools whose preparation for the profession varies greatly. It often happens that VET teachers have undergone a transition from the practical economic sphere to the teaching profession, transition from the branch expert to the VET teacher. Vocational education is an important part of the education system, preparing pupils directly for the labour market needs. For most pupils, it is the last formal form of education in their lives. In the Czech Republic, approximately 70% of the population is educated in vocational education every year. The paper identifies main pathways to the identity of VET teacher, consisting of the professional identity of an expert in relevant field and the professional identity of a teacher. When the identity of VET teacher is created, there is often a "boundary crossing" associated with the creation of a new identity, or problems with the loss of the original identity. The intertwining of the teacher's identity areas subsequently affects development of wider spectrum of competences. These competences need to be developed in the preparation of VET teachers or they can be related to the requirements for the performance of the profession of VET teacher. They can be divided into general pedagogical competences, competences in the field of branch didactics and professional competences of the expert in relevant field. Teachers also participate in the implementation of the curriculum in a particular school and thus become part of the practical side of educational policy. The above-mentioned approaches thus create the basis for the subsequent investigation of "teacher agency" in the conditions of vocational education.

Keywords: Teacher identity, Teacher professional identity, Vocational education, Identity pathways, Teacher competencies

1. Introduction

Teachers represent an important personality in the development of human knowledge of each human being in our society and they also play an irreplaceable role in the education of future generations. Everyone in society, whether it is a pupil, student, parent, or the public, has a certain idea of what a teacher should look like – the ideas about teacher's behaviour, abilities, and approaches to the education process and to the profession. These opinions vary due to the development of society, the cultural and social conditions in which teachers work, the type of school, and many other factors. Teachers also perceive themselves in the role of a teacher, as a representative of the teaching profession, considering not only the mentioned areas but a lot of other aspects influencing them on personal, professional, cultural, social, and other levels (Fejes & Köpsen, 2014; Vähäsantanen & Hämäläinen, 2019). They are influenced by the concept of their own competences and the meaning of their lives, which also includes, among other things, the role of a teacher and the performance of the teaching profession. All these factors influence the teacher's identity.

The identity of a teacher is variable, both, over time and across the various contexts in which the teacher works, including especially cultural and sociological aspects. Therefore, the teacher's identity includes psychological personal factors, social and socio-cultural factors, and societal factors.

Teachers in vocational education and training (VET teachers) are a specific group of teachers that is part of all education systems in every country. Of course, VET teachers have some characteristics in common with other teachers (teachers of general education subjects), but VET teachers differ from other teachers especially in their focus on professional areas directly related to the performance of their profession. VET teachers focus on the professional component of education – branch expertise – which is different from the focus of general education subjects. Although all teachers should be an expert in their field of education (in their specific subjects), should be able to convey this educational content in an appropriate form to students, and should take into account the educational and social needs of students within the education process at the same time, for VET teachers, the component of educational content and appropriate didactic analysis of the curriculum and didactic transformation are more emphasized. This approach is consistent with the concept of pedagogical-content knowledge and Shulman's point of view on education process (1986). In boarded context of teacher's identity analysis also the Flower model can be useful (Vloet et al., 2020).

One main difference between VET and general education teachers is that it is common for teachers of general education subjects to decide about their future career as a teacher already during their studies and obtain their qualifications precisely through university studies for teaching the chosen subjects, while for VET teachers, this path to their profession is not dominant. For VET teachers it is more common, that in their early career they work in the field of expertise in which they were educated, often educated "only" at the level of secondary vocational school, achieve a certain degree of recognition in this profession (field of expertise) and only after that move into the teaching profession. There is therefore a considerable number of VET teachers who first developed a professional expert's identity, or as Sarastuen (2020) defines it professional work identity, in the relevant field of their expertise and only because of a change of profession they develop a professional teacher's identity. There is thus a significant impact of two identities, which intertwine and transfer from one identity to another, which is also associated with concept of boundaries crossing.

2. Identity of the Vocational Education and Training Teachers

Although identity, as well as teacher's identity, has been a widely researched phenomenon over the last few decades, examining the identity of VET teachers is a relatively neglected focus. Relevant studies about VET teachers' identity are written predominantly by authors from Scandinavia (see Fejes & Köpsén, 2014; Vähäsantanen, 2015; Vähäsantanen & Hämäläinen, 2019; Sarastuen, 2020) or Australia (see Chan, 2012; Green, 2015; Tran & Nguyen, 2015).

In those studies, authors emphasize the important position of VET teachers within the education system, when the dominant task of vocational education and training is the adequate preparation of pupils for the future performance of a profession in the relevant field. Preparations of pupils takes place both, within the school, and in connection with business from economic practice, regardless the differences in education system in individual countries. Due to the considerable number of fields required by the labour market and the wide variety of teaching methods for preparing pupils to the future profession, vocational education and training is thus a very diverse system. Also, a common feature in the mentioned education systems is the effort to increase the quality of education, and the related reforms that are taking place in the given education systems. One of their influences is the effort to increase the qualification of VET teachers in the form of a prescribed and required university qualification, alternatively, supplementing the needed qualification of VET teachers through further education (Canrinus et al., 2019). Even despite these efforts, there are teachers working in vocational education and training whose basic qualification for the profession of VET teacher consists in the experience they have gained through the direct performance of the given profession in economic practice. In this sense, the situation in the mentioned countries, especially in Scandinavian countries, does not differ significantly from the situation in the Czech Republic. In the Czech Republic, there are tendencies to improve the quality of the education process in general, and specifically in vocational education and training. These tendencies can be noted both, at the level of educational policy strategy, influencing the main ideas of the development of education in the Czech Republic, and at the level of requirements for the qualification of VET teachers.

In the Czech Republic, there is the effort to slim down the branch structure of vocational education and training, to increase the portion of general education subjects and general specific vocational subjects in the first years of secondary vocational education and postpone the actual specialization in the vocational education of the pupils to the later years of the education process. All those ideas are connected to the improvement of the quality of education via curriculum adjustment based on the current educational policy in the Czech Republic. Approximately 70% of a population of given year in the Czech Republic is preparing for a future profession in secondary vocational education, which is the highest percentage in the EU for a long time (Marinič & Pecina, 2021). It seems the vocational education and training is very popular in the Czech Republic. However, according to the surveys among the parents of the future pupils of secondary schools, secondary grammar schools and the general-education focus is preferred. Even though the benefit of vocational education and training for graduates of secondary vocational schools is a benefit for the labour market, society prefers a general-educational focus in secondary schools (Tran & Nguyen, 2015).

In accordance with the effort to improve the quality of secondary vocational education, the Ministry of Education in the Czech Republic adjusted the conditions for obtaining a teacher's qualification for in vocational education and training at master level so that only graduates of the master's program in the relevant professional field of expertise can enrol in the given master education program at pedagogical faculties of the universities or other institutions preparing the future teachers. This may appear justified, as its goal is to increase the quality of the education process through the expected increase in the qualification level of the VET teachers. At the same time, it corresponds to the tendencies that are also manifested in the Scandinavian countries. In

practice, this means that master university education programs for future VET teachers have not longer been offered in the Czech Republic. In other words, the training of qualified experts in the teaching profession for the needs of professional education does not take place in practice, thus there will be not sufficient VET teachers in the future to preserve the actual portion of secondary vocational school in comparison to other types of secondary schools. At the same time, however, there are many VET teachers in practice whose qualification is based on completed secondary vocational school education in the relevant field of expertise and often even without adequate, or even any, pedagogical and didactic education. These teachers are employed by exception because the school principal was unable to find a qualified VET teacher.

In connection with the identity of VET teachers, it is possible to identify the significant influence of their previous work in the given field, in which they achieved a certain recognition and thus gained invaluable experience. The transfer of the experience and knowledge by VET teachers into teaching practice is significant. For these teachers, the original identity, i.e., the professional expert's identity, is supplemented with a new, professional teacher's identity. Teachers create this professional teacher's identity either through education in the pedagogical and didactic field, or even through direct teaching in pedagogical practice. Thus, several possibilities for the development of a teacher's identity can be identified, i.e., the pathways of VET teacher to a teacher's identity as a complex identity containing the professional expert's identity and professional teacher's identity.

These pathways typically imply certain signs of identity change. The process of teacher's identity creation involves, at least to some extent, leaving the original profession of expert in given field and shifting considerable time, energy, and effort to the new profession of the teacher. VET teachers are crossing boundary (between identities) in connection with a change of identity, or with the creation of a new identity – a professional teacher's identity. This crossing of boundary cannot be understood only as a move from one profession to another, i.e., from the point of view of losing one identity and gaining another new identity, but it also needs to be viewed as a long-term phenomenon, enabling VET teachers to simultaneously use both identities (Chan, 2012; Fejes & Köpsén, 2014).

Boundary crossing (between identities) brings both negatives and positives to VET teachers (Fejes & Köpsén, 2014). Among the negatives are the feeling of loss of original identity, when teachers may feel discomfort, arising from the impossibility of continuing to fully perform their original profession in their field of expertise, connected with the loss of feelings associated with the performance of this original profession. In other words, VET teachers may feel that they have had to let something go (Sarastuen, 2020). At the same time, they may feel insecure due to insufficient pedagogical and didactic competences, especially in managing the education process, approach to pupils, use of suitable organizational forms or teaching methods. On the other hand, even in this context there can be positives associated with the duality of the identity of VET teachers. This means that VET teachers can look at pedagogical and didactic problems in teaching from a perspective of their original professional expert's identity and use this insight to solve the problem in teaching. At the same time, if VET teachers retain both identities and work to maintain their original professional expert's identity, they are considered experts in their field who adequately prepare future graduates of secondary vocational schools to apply to the needs of the labour market. VET teachers can achieve this either by remaining partially active in the relevant field of their expertise or through further education in the given professional field. In addition to boundary crossing, VET teachers encounter moments in practical teaching that further shape the formation of identity, both the original identity, i.e., the professional expert's identity, and the newly acquired identity, i.e., the professional teacher's identity. These "bumpy" moments are characterized by the fact that they force VET teachers to step out of their comfort zone and solve the situation immediately (Vloet et al., 2020). VET teachers can therefore use both, their original professional expert's identity and the newly acquired professional teacher's identity, and the competences resulting from both to solve these moments.

3. Pathways Towards the Identity of Vocational Education and Training Teachers

The identity of VET teachers is multilevel. However, it includes at least two identities – the professional expert's identity and the professional teacher's identity – which interact and intertwine. Several possibilities of entering the VET teacher profession can be distinguished. These possibilities consist formal requirements for the performance of the profession in the form of undergraduate teaching training with applied practice or in the form of further education. These ways can thus be characterized as pathways to the identity of a VET teacher and can be identified through the following conceptualization.

The first formed and comprehensively created identity of future VET teachers is the professional expert's identity, due to the requirements for undergraduate training of future teachers, but also due to the applied practice in the past, in the conditions of Czech Republic as well as in the other countries. This professional

expert's identity is already formed during the initial preparation of the future teachers due to their education at secondary schools, typically secondary vocational school of the relevant field. The relevant field is the one which the given individuals want to devote themselves to in practice in the future. Usually, at the time of choosing a secondary school and in the first years of secondary school education, those individuals are undecided about becoming a teacher. However, this education already forms the professional expert's identity of the future teachers. It is therefore important how education takes place at secondary vocational schools and what competences a future potential teachers acquire here. Furthermore, the professional expert's identity of a future potential teachers can be developed through university studies in the relevant field, or it develops in the applied practice of the given field, when the professional competences of the given individuals are further developed.

In cases where individuals decide to become a future VET teachers at the end of secondary school education, without interrupting the educational path, the future VET teachers enter university training for teaching in vocational education and training. Pedagogical and didactic competences are usually developed in general during the university training for teaching. But during the university training for teaching in vocational education and training, the relevant general or specific branch didactic competences are also developed. These competences will the given future VET teachers use in their teaching practice. This leads to the development of the teacher's identity, comprising professional teacher's identity and professional expert's identity. However, if during this period the future VET teachers does not have practical ties to the chosen field, for example at least occasional partial work involvement in economic practice or does not carry out entrepreneurial activities, then their professional expert's identity remains purely formed by their pedagogical study and the experiences future VET teachers gained in their education. The change of identity may not be significantly felt by the future VET teachers at this stage. Nevertheless, already in this period there is a change and intertwine of the professional expert's identity and the professional teacher's identity, from which some of the above-mentioned positives and negatives can occurred.

In cases where future potential teachers, who have completed university study in non-pedagogical education program in the relevant field after secondary school or have acquired professional competencies through the practical experiences in entrepreneurial activities, enter the university training for future VET teachers the professional teacher's identity develops. It is like the previous mentioned case; however, the change of teacher's identity tends to be more demanding. It is due to the original professional expert's identity has been longer formed, the future VET teachers usually achieve a certain recognition in the given field of expertise, and a strong original professional expert's identity makes it difficult to form a new professional teacher's identity. In other words, future VET teachers prioritize educational content over its appropriate didactically processed form. This prioritization of future VET teachers also affects the professional teacher's identity creation related with the development of pedagogical and didactic competences. This fact is often supported by practical experience, which can be different from theoretical approaches, and thus puts individuals in opposition to the information presented during the university training for future VET teachers, based on which a new professional teacher's identity is formed.

In practice, there is another possible way of building the identity of VET teachers, which is related to the direct transition of an experts in given field of expertise into teaching practice. In this case, the future VET teachers are thus exposed to direct pedagogical action, without previous pedagogical and didactic preparation. VET teaches lack general pedagogical and didactic competences, but also the ability to adequately use subject-specific didactic competences by VET teachers is limited. VET teachers can overcome the inconvenient moment during the teaching, due to their strong original professional expert's identity since they can approach the pupils as new colleagues who need to be trained in the practice of the given field of expertise. Since in this case it is a teacher with a strong original professional expert's identity, with considerable experience in the given field and with applied practice in the given field, this does not represent an insurmountable problem for the future VET teacher.

4. Competencies According to Identities

In summary, several pathways to the emergence of the identity of VET teachers can be identified, when these teachers create, transform and merge professional expert's identity and the professional teacher's identity. The intertwining of these two identities thus creates three areas that can be linked to the competences of future VET teachers.

The purely professional expert's identity of VET teacher is associated with professional competences significant for the relevant field and applied practice in the relevant field of expertise. Under the conditions of the Czech

education system, these professional competences are already part of secondary vocational education, and they are also further developed, especially for students of relevant fields of expertise in university education with a non-pedagogical focus. These professional competences are developed both, at the level of theoretical knowledge and at the level of practical skills and abilities, even to a certain extent in attitudes. Thus, there is a comprehensive development of cognitive, psychomotor, and affective areas in the future potential VET teacher in the relevant professional area.

The second area of competences development, in connection with a purely professional teacher's identity, is the development of pedagogical and didactic competences in general. Here, the given competences are developed mainly through university studies in the relevant educational program focused on the training for practical teaching and professional subjects at the faculties of pedagogy, or at other institutes preparing future VET teachers in terms of pedagogy. The development of these competences relates to areas of identification with appropriate educational theories, a didactic approach to the education process in general, issues of educational impact on pupils, or areas of classroom management and the functioning of the school and school system.

The third area, which is typical of the intertwining of professional expert's identity and professional teacher's identity of VET teachers, is the area of branch-oriented didactic competences. The development of these competences can occur both in the institutionalized educational environment of faculties of education or other institutions preparing future VET teachers, but the acquisition of these competences can also occur through the direct pedagogical experience of VET teachers, as described above. The development of these competences focuses mainly on didactic knowledge of the content and the ability to adequately transform educational content to the educational needs of pupils, regarding the organization of the educational process and the fulfilment of the educational goals set in the framework educational program in the conditions of the Czech Republic. These competences, even if they may seem simple at first glance, involve significant demands. This is particularly evident for VET teachers with a significantly developed original professional expert's identity, as they prefer professional content to its didactically processed form of content, which is the more comprehensible form for pupils, also more suitable for the educational process and more adequate to the educational needs of pupils. It is not only important to understand the professional content of the curriculum but VET teachers need to develop the ability and competences to ensure that this content, as part of the education process, is adequately adapted to the educational needs of the pupils, without losing the professional content and context. It is so well-known that not everyone who understands the given field of expertise is also able to teach it to others in an appropriate way. The process of education requires knowledge of appropriate didactic teaching methods specific in the field of expertise, the choice of an appropriate organizational form of education and the use of appropriate, but for schools still available, teaching resources, tools, and aids.

5. Discussion

The presented conceptualization of the approach to the identity of VET teachers is in line with the approaches of authors from Scandinavian countries (see Sarastuen, 2020; Fejes & Köpsén, 2014; Vähäsantanen, 2015). Paths to the identity of VET teachers describe the possibilities of acquiring and developing two components of the otherwise multi-layered identity of a teacher, namely professional expert's identity and professional teacher's identity.

It is also possible to define a link to the educational policy applied in individual countries and the response of teachers to changes in educational policy, which are manifested in their involvement or distancing from the implemented changes, in connection with the issue of forming the complex identity of VET teachers. In this sense, it is not only the case of identity of VET teachers, but it becomes the agency of VET teachers (Vähäsantanen, 2015). In the Czech Republic, due to the implementation of the educational policy strategy, it is assumed that teachers will be proactively involved in influencing the education process, as actors of educational policy. At the very least, they will do so at the level of individual schools, when it is these schools, where teachers formulate the school education program based on the requirements of the framework education program. Therefore, the teachers will contribute to the transformation of the framework education program according to the personnel and material possibilities of individual schools to the school education program. In this context, the issue of the identity of VET teachers extends to the educational policy management at the school level and subsequently to the management of the education process and potentially also the management of the school itself.

Changes towards efforts to increase the qualification of VET teachers are appreciable, but they do not correspond to the acute need to acquire new VET teachers, especially young ones. If university education is

required as a prerequisite for the possibility of pedagogic studies of VET teachers, this discourages many interested applicants and clearly extends the length of training for future VET teachers. Moreover, in the light of the upcoming reform of education at secondary vocational schools in Czech Republic the requirement for a university qualification in the field of expertise for VET teachers appears to be an unsystematic step. Part of the upcoming reform is an increased emphasis on the practical training of future secondary school graduates, either through at least partial contact with real practice in individual fields of expertise in the form of excursions, when usual preparation takes place in a school environment, or the possibility of introducing a dual system of education, when the dominant practical training takes place in the real conditions of economic practice. The future VET teachers are supposed to acquire relevant professional experience already during their secondary vocational education or better by practical experience in entrepreneurial practice. VET teachers thus need rather specific branch didactic or pedagogical knowledge to be able to mediate the expertise to the pupils. This should be the main interest of management of secondary vocational schools and the Ministry of Education. This type of didactical and pedagogical education could be provided by a lot of institutions, and there is interest for such education among the future VET teachers as well (Adamec & Janderková, 2021; Adamec & Šimáně, 2021).

6. Conclusion

The VET teachers are an important part of the education system in every country. Their position is also specific due to the focus of vocational education in connection with the preparation of future workers for the needs of the labour market, with adequate competences to be applied in this labour market. VET teachers are usually people with significant previous practical experience, and they also use those abilities in their teaching profession. They therefore have a significantly developed original professional expert's identity. Now, when they become VET teachers, they can use this identity, and the competences associated with it, for the successful teaching and administration of the education process. The second component of their identity, i.e., professional teacher's identity, is formed depending on the path of acquiring the professional identity of VET teachers. This can lead through university studies, additional or further studies, or through direct teaching practice. Whatever this path may be, its purpose is development in the field of general pedagogical and didactic competences. In the area of intertwining of both identities, i.e., intertwining of professional expert's identity and professional teacher's identity, the development of general and specific field-specific didactic competences takes place. All these competences are important for the profession of VET teachers. The acquired competences are more important than the pathways that led to them. Also, the complex identity of VET teachers, the professional expert's identity together with the professional teacher's identity and intertwining of them is more important than the pathways leading to the identity of VET teacher. Even if efforts to increase the quality of vocational education not only in the Czech Republic focus, among other things, on increasing the expertise of VET teachers, it is not entirely important whether future VET teachers achieve the development of their professional expert's identity through university education, or only through secondary school education, or through activities in practice.

References

- Adamec, P. and Janderková, D. (2021) "Analysis of demand for counselling services for university/college students", *Ad-Alta Journal of Interdisciplinary research*, Vol. 11, No. 1, pp 8-14.
- Adamec, P. and Šimáně, M. (2021) "Perception of online learning by students of university pedagogical study programs during COVID-19 pandemic", *Ad-Alta Journal of Interdisciplinary research*, Vol 11 No.2, pp 8-14.
- Canrinus, e. T., Delahefte, I. M. and Myhre, S. (2019) "VET teachers' beliefs on collaboration, identity, and status and their relationship with professional development" *Pedagogische Studiën*, Vol. 96, pp 463-480
- Fejes, A. and Köpsén, S. (2014) "Vocational teachers' identity formation through boundary crossing", *Journal of Education and Work*. Vol. 27, No. 3, pp 265-283, <https://doi.org/10.1080/13639080.2012.742181>
- Green, A. (2015) "Teacher induction, identity, and pedagogy: hearing the voices of mature early career teachers from an industry background", *Asia-Pacific Journal of teacher Education*, Vol. 43, No. 1., pp 49-60. <https://dx.doi.org/10.1080/1359866X.2014.905671>
- Chan, S. (2012) "Perspective of new trades tutors: boundary crossing between vocational identities", *Asia-Pacific journal of teacher Education*, Vol. 40, No. 4, pp 409-421. <https://dx.doi.org/10.1080/1359866X.2012.724656>
- Marinič, P. and Pecina, P. (2021) "Vocational education in the Czech Republic and selected EU countries according to chosen indicators". In *Selected chapters of contemporary vocational education topics*. Powerpoint, Prague. pp 30-44, ISBN 978-80-7568-402-8
- Sarastuen, N. k. (2020) "From vocational worker to vocational teacher: a study of identity transition and loss", *Journal of Vocational Education and training*, Vol. 73, No. 3 pp 333-349. <https://doi.org/10.1080/13636820.2019.1667533>
- Shulman, L. S. (1986) Those who understand: Knowledge growth in teaching. *Educational Research*. Vol. 15, pp 4-14, <https://doi.org/10.3102/0013189X015002004>

- Tran, L. T. and Nguyen, n. T. (2015) "re-imagining teachers' identity and professional under the condition of international education" *Teachers and teaching: theory and practice*, Vol. 21, No. 8, pp 958-973,
<https://dx.doi.org/10.1080/13540602.2015.1005866>
- Vähäsantanen, K. (2015) "Professional agency in the stream of change: Understanding educational change and teachers' professional identity", *Teaching and Teacher Education*, Vol. 47, pp 1-12,
<https://dx.doi.org/10.1016/j.tate.2014.11.006>
- Vähäsantanen, K. and Hämäläinen, R. (2019) "Professional identity in relation to vocational teachers' work: an identity-centered approach to professional development" *Learning: Research and Practice*, Vol. 5, No. 1, pp 48-66,
<https://doi.org/10.1080/23735082.2018.1487573>
- Vloet, K., Klatter, E., Janssen, S. and Kassels, G. (2020) "Bumpy moments considered as critical incidents in dialogue. Professional Identity of technical VET-teachers" *Quaderns de Psicologia*, Vol 22, No. 2, e1573, pp 1-26,
<https://doi.org/10.5565/rev/apsicologia.1573>

What are the Relations Between the Characteristics and Context of the Board and its Effectivity in Decision-Making?

Paul Morsch

University of Applied science Utrecht, The Netherlands

Paul.morsch@hu.nl

Abstract: The decision-making process in boardrooms has a significant impact on organizational performance. In the last two decades, scientific research on the decision-making process in boardrooms has increased. This resulted in a substantial body of knowledge about boardroom factors and their relation to organizational performance. However, the effectiveness of the decision-making process in boardrooms is still mainly a black box. Amongst other things, scientific findings seem to contradict each other, which could mean additional insights are still missing. This research aims to contribute to a better understanding of this black box. This is done by providing an overview of the existing scientific literature on the relations between these factors, the circumstances, and the effectiveness of the boardroom. The study described in this paper is based on a preliminary literature research and insights from this study will be used to conduct a more in-depth structured meta-literature review. In addition to insights into the factors and characteristics that influence the decision-making process in boards and the mechanisms that influence the boards effectiveness, the most important insights for follow-up research from this study are: findings from earlier research seem contradicting, and the research area cannot be fully understood by observing it from a single- or even double lens (like boardroom characteristics, psychological factors or organizational perspective). Part of the explanations for the effectiveness of decision-making in boardrooms must be sought in variables that are difficult to observe, difficult to measure, under difficult circumstances from multiple scientific lenses and theories.

Keywords: Boardroom, Characteristics, Context, Decision-Making, Effectiveness

1. Introduction

The decision-making process in the board(room) is a challenging research topic for various reasons. First, the decision-making process on boards is complex (van Ees et al., 2009, Madhani, 2017 and Bezemer et al., 2022). A set of individuals with different expectations of their job, and with different backgrounds and interests must make decisions together about various organizational functions and processes, is responsible for strategy development, merger and acquisitions, monitoring organizational performance, appointing c-level executives, providing guidance and oversight, and ensuring accountability. This should be done in a limited time and with complex information (Dalton et al., 1998). Moreover, the effectiveness of boards can be influenced by various contextual factors such as industry dynamics, organizational culture, regulatory environment, and stakeholder expectations (Madhani, 2017). These contextual factors introduce additional complexity and make it challenging to isolate the impact of the board itself on organizational performance.

Because the decision-making process is multidimensional, it can be difficult to measure accurately (Sierra-Moran, 2021). Assessing board effectiveness often involves capturing subjective perceptions, evaluating governance practices, and measuring organizational performance outcomes, which may vary across different organizations and contexts (Petrovic, 2008).

Another difficulty is the availability of data and information about decision processes in boards. Much of the information boards handle is confidential. This may lead to limitations of transparency, which in turn may create a challenge for transparency, and for gathering comprehensive and reliable data for analysis. In addition, board members may have their personal strategic reasons for not being transparent (Schaedler et al., 2022).

There is much evidence of the relevance of board composition, board committees and the influence of board decisions on organizations from a practical and a scientific perspective and its relevance is growing.

In particular, the role and the composition of boards are assumed to have important influence on perceived board performance (Bradshaw et al., 1992; Preston & Brown, 2004, Yoon, 2021) and organizational performance (Callen et al., 2010; Herman & Renz, 2000, both quoted by Yoon 2021). The importance of board committees has not escaped the notice of the business community. For example, the New York Stock Exchange requires listed firms to maintain an audit committee (Daily, 1996, and Dalton et al. 1996).

Sierra-Moran et al. (2021) has highlighted the importance of board characteristics related to firm innovation for the literature on corporate governance. While Buse et al. (2016), Lu et al. (2022) and Mgamal (2022) stated that Board structure (e.g., CEO duality and board independence), board characteristics and diversity

(e.g., gender and nationality diversity), among others, demonstrate the complexities of corporate-board-issues, as well as the importance of, and necessity for, regulation and academic research in this area. As Erwin et al. (2019) state: "Given the managerial and financial turmoil experienced by organizations in recent years, understanding the role and influence of boards is an extremely salient topic for all industries"

The above implies this research topic is very relevant because of its significant impact on organizational performance, but it is very difficult to investigate. In order to conduct good and thorough research in this field, it's important to first have:

- A clear oversight of the state of the art of the research in this field (what are the main concepts in the field, and what are relevant discussions in the scientific domain?).
- A clear picture of relevant theoretical perspectives.
- A clear picture of the requirements for a well-substantiated methodological approach.

To achieve these interrelated objectives, this study poses the following **research question**:

What are the relationships between boardroom characteristics, the decision-making processes, their context and effectiveness?

This paper describes the most important insights from a preliminary study that aims to identify the main concepts in this field of research that are relevant to answer the research question. In addition, this paper describes the research design of the structured literature review and the results of the selection phase of this research.

In the preliminary research, a selection of specific boardrooms will not be made in advance such as for instance governmental, industry, size, rules of transparency, region). It is suspected that the scope within which a board of directors functions influences the relation between the factors and the effectiveness of the boardroom. The literature will be analyzed, among other things, for this relationship and to answer the question to keep this scope so broad in the structured literature review.

In section 2, the results of preliminary literature review on theoretical concepts relevant to the rest of the research are described. In section 3, the next step, a structured literature review is described and motivation for the methodology followed during this research. The selection phase of this next step is already taken so we can describe some characteristics of the results as well. In section 4, some of the results of section 2 are evaluated and reflections regarding the remainder of this research project is given.

2. Results of the Preliminary Literature Review

The preliminary study was started by formulating several queries that were executed on Google scholar and HUGO, which is the search engine of the library of the University of Applied Science in Utrecht that provides access to various databases.

Queries contained, variants of 'board' in combination with one or more, variants of terms like 'factors', 'characteristics', 'organizational performance'. In the search process some other terms popped up after reading some articles, like 'theory', 'context', 'mechanisms' and 'positive influence' as well as 'negative influence'. In the following we discuss the main concepts.

Board of directors

The main concept of this research is the board of directors. Zattoni, & Cuomo (2016) defined a board of directors as: "A governing body comprising individuals who are elected or appointed to represent the interests of stakeholders in an organization. It provides oversight, sets strategic objectives, and ensures compliance with legal and ethical standards." While Judge, & Talaucar (2017) defined a board of directors as follows: "The board of directors is a formal structure within an organization consisting of individuals who are responsible for the ultimate decision-making authority. It acts as a fiduciary on behalf of stakeholders, ensuring the organization's long-term success and sustainability." These and other definitions of boards of directors mostly have similar elements. It is a formal group of individuals appointed with essential organizational tasks that it has to take decisions about considering different interests.

Characteristics of the board that (could) influence the effectiveness

In the preliminary study of the literature several factors were found that influence the effectiveness of boards:

- Composition: like diversity of skills, expertise, experiences, and backgrounds among board members, plays a significant role (Buse et al., 2016).
- Independence: independent directors is crucial for effective governance. Independent directors are free from conflicts of interest and can provide objective judgment and oversight of management decisions (Fuzy et al., 2016; Agarwal & Singh, 2020).
- Team characteristics and skills: some skills are not individually determined but are a skill or characteristic of the board as a group, like safety to have a different opinion or the ability to cooperate in a constructive way (Lin et al., 2017; Lin et al., 2018; Leblanc & Gillies, 2005).
- Leadership and Chairperson: The leadership skills and qualities of the board chairperson are vital for facilitating effective board functioning. (Renz, 2016; Guo & Masulis, 2015; Banerjee et al., 2020).
- Board Structure and Committees: The structure of the board, including the establishment of appropriate committees (such as audit, compensation, and nominating/governance committees), can enhance its effectiveness. (Rao & Tilt, 2016; Rao & Tilt 2017; Ghafran & O'Sullivan 2017).
- Board-CEO Relationship: A healthy and constructive relationship between the board and the CEO is crucial to provide guidance, support, and constructive challenge to the CEO while maintaining a strong oversight role (Garg & Eisenhardt, 2017).
- Communication and Information Flow: Efficient communication and information flow between the board, management, and stakeholders are critical. Timely access to accurate and relevant information allows the board to make informed decisions and provide strategic guidance (Wheelen et al., 2017; Gulzar & Nawaz, 2017).
- Board Evaluation and Development: Regular board evaluations, both individual and collective, enable self-assessment and continuous improvement. Identifying areas for development and implementing appropriate training or development programs for board members can enhance effectiveness (Zattoni et al., 2017).
- Governance Processes: Strong governance processes, including effective board meeting procedures, agenda setting, and documentation, contribute to the overall effectiveness of the board (Judge et al., 2015).
- Alignment with Stakeholders: Boards need to consider the interests and perspectives of various stakeholders, including shareholders, employees, customers, and the wider community. (Filtochev et al. 2019).

The context of the board

Cappellen et al. (2021) explored the influence of organizational context on board effectiveness from an organizational perspective and found the following contexts to be important:

The size and complexity of an organization play a crucial role in determining the expertise and skills required for an effective board of directors. Larger and more complex organizations necessitate boards with diverse backgrounds and knowledge to oversee activities and make strategic decisions. Additionally, the industry and sector in which an organization operates have unique characteristics and challenges, demanding specific knowledge and expertise from board members. Boards with industry-specific knowledge can better grasp the strategic priorities and risks associated with the organization's sector. Furthermore, the stage of an organization's life cycle influences the role and effectiveness of the board. Start-ups, mature companies, and organizations undergoing significant transformations each have distinct governance needs, requiring boards with skills and experience relevant to the particular stage. Finally, the ownership structure of an organization has an impact on board effectiveness. Family-owned or founder-controlled firms, for instance, involve different governance dynamics compared to publicly traded companies. Boards in these contexts face challenges related to family dynamics, succession planning, and alignment of interests.

Besides the above, Schaedler et al. (2022) found that the state of the macro economy (growth versus crisis) also influences the organization. During a crisis it turns out that a specific positive correlation between factors and board-effectivity can change to a negative one, for example board independence (Schaedler et al., 2022).

In another study Rietz & Henrekson (2019) found the following contextual aspects influencing the functioning of the board:

The board size and composition in a specific region can be influenced by various factors. Firstly, cultural and social norms prevailing in the region shape these aspects. For example, in regions with a collectivist culture, there may be a preference for larger and more diverse boards, reflecting the desire for broader representation

and consensus-based decision-making. Secondly, economic conditions and regional industry composition also play a role. Regions with a high concentration of large firms or specific industries may require larger boards to accommodate the complexity and diversity of the business environment. Moreover, institutional factors such as the regulatory environment and institutional framework of a region impact corporate governance practices. Different regions may have distinct regulations and guidelines that dictate board size and composition requirements, such as mandates for independent directors or gender diversity. Additionally, the ownership structure prevalent in a region influences board size and composition. In regions with a higher presence of family-owned businesses, boards may be smaller and have a higher proportion of family members, reflecting the influence of family dynamics and interests. Lastly, the political climate and governance practices in a region can also shape board size and composition. Regions that emphasize stakeholder interests and corporate social responsibility may opt for larger boards with diverse stakeholder representation.

Effectiveness of the board and the performance of the organization

One of the main objectives of the decision-making process of the board is to provide the organization with an effective strategy (Lu et al., 2022 and Pugliese et al., 2009). So, to be able to properly assess the effectiveness of the decision-making process of the board, it should be defined what an effective strategy of the organization is. According to Naranjo-Valencia et al. (2017) "the effectiveness of organizational strategy refers to the extent to which strategic goals and objectives are achieved, leading to desired outcomes and competitive advantage for the organization." Another definition is provided by Hitt et al. (2017) who state that "the effectiveness of organizational strategy is the ability of a strategy to align the organization's resources, capabilities, and activities with external market conditions and internal competencies, resulting in superior performance and sustainable competitive advantage." While Simons (2017) finds that "the effectiveness of organizational strategy refers to the degree to which the strategy is successfully executed, resulting in the attainment of strategic objectives, improved performance, and the creation of value for stakeholders." Finally, Eisenhardt & Sull (2018) state that "the effectiveness of organizational strategy is the extent to which the strategy enables the organization to adapt to changing environmental conditions, exploit opportunities, mitigate threats, and achieve its long-term goals." (Eisenhardt & Sull 2018).

Provisionally, this study assumes the following definition:

An effective organizational strategy provides the organization and its resources with a course that will, given the (uninfluenceable) and changing external circumstances, enable the organization to achieve its (long-term) goals as good as possible.

Mechanisms that influence the effectiveness

Another important concept that emerged were mechanisms in the board that influenced the effectiveness of the board. The effect can be positive as well as negative.

Examples of mechanisms that have a positive impact on effectiveness of the board:

- **Open Communication and Information Sharing.** Fostering a positive board culture characterized by open communication, respect, trust, and constructive debate is essential. Board dynamics should encourage collaboration, active participation, and the free expression of diverse viewpoints (Fenwick & Vermeulen, 2018; Petrovic 2016).
- **Constructive Conflict and Debate.** Board members should engage in board discussions and deliberations in a critical on the content of the debate and at the same time a collaborative and constructive attitude towards one another (Heemskerk et al., 2017; DeGraff & DeGraff, 2017).
- **Collaboration and Teamwork.** In line with the previous item, they should respect other directors' opinions, and engage in healthy debates while maintaining a focus on the organization's best interests. Collaboration fosters effective decision-making and builds a positive board culture (Brennan, 2022).
- **Trust and Psychological Safety.** Trust and psychological safety create an environment where board members can effectively collaborate, engage in open dialogue, and make collective decisions for the benefit of the organization. It is an important condition for open communication and constructive debate (Labaki & D'Allura, 2021; Coulson-Thomas, 2018).
- **Shared Vision and Goal Alignment.** A shared vision provides members of the board a common understanding of the organization's purpose, mission, and long-term goals. It ensures that their decisions and actions are in alignment with the organization's strategic objectives. When board members share a vision, they can prioritize their efforts (and avoid conflicts) (Jaskyle, 2018).

Examples of mechanisms that have a Negative impact on effectiveness of the board:

- Groupthink is the phenomenon where the board of directors seeks conformity and consensus at the expense of critical thinking and independent decision-making. This can lead to flawed or irrational decisions (Perquin-Deelen, 2020).
- Social loafing occurs when individuals exert less effort or contribute less to the task of the board compared to when they are working individually. This can be due to a diffusion of responsibility and the belief that their individual efforts are not crucial. (Brown & Peterson, 2022).
- Dominant individual personalities refer to members of the board who assert control, influence, or authority over the rest of the board members, potentially limiting the participation and input of others, hindering collaborative decision-making, and creating power imbalances within the board (Puni & Anlesinya, 2020).
- Ineffective communication refers to a breakdown in the transmission or understanding of information within the board. It can lead to misunderstandings, misinterpretations, and a lack of clarity, hindering effective decision-making and collaboration (Nicholson et al., 2017).
- Lack of diversity and inclusion refers to a group composition that lacks representation from different backgrounds, perspectives, experiences, or demographics. It can limit the range of ideas, hinder creativity, and result in biased decision-making and a narrow outlook on issues (Buse et al., 2016 and Mgamal, 2022).
- Top of Form

Bottom of Form

Theoretical frameworks used as a perspective to evaluate the decision-making process of boards

The last concept that emerged from the preliminary literature research were the theories and perspectives used in different studies. Yun Lu et al. (2022) describe four categories of perspectives of theoretical frameworks used:

1. Economic and Governance perspective, like agency, stewardship, stakeholder and managerial and governance theories.
2. Regulatory perspective, like institutional and legitimacy theory.
3. Resource-oriented perspective, like resource dependency, critical mass, human capital, signalling theory.
4. Behavioral or cultural perspectives like psychological and sociological theory.

The most mentioned theories are described here (between brackets the category the theory belongs to).

- The Agency theory (1) focuses on the relationship between principals (shareholders) and agents (board members) and examines how boards can mitigate agency problems through monitoring, incentives, and aligning interests. It explores the role of boards in ensuring accountability and effective governance (Jensen & Meckling, 1976; Fama & Jensen 1983).
- The Resource Dependence theory (3) emphasizes the external environment's influence on organizations and examines how boards acquire and manage resources to meet organizational goals. It highlights the role of boards in accessing and leveraging external resources and managing relationships with stakeholders (Pfeffer & Salancik 1978; Hillman & Dalziel 2003).
- The Stewardship theory (1) assumes that board members act as responsible stewards of the organization and prioritize the interests of the organization over their own. It explores how boards contribute to long-term organizational success by providing strategic guidance, support, and oversight (Davis et al. 1997; Davis & Cobb 2010).
- The Upper Echelons theory (4) defines the characteristics and attributes of top executives, including board members, and examines how their backgrounds, experiences, and demographics influence decision-making and organizational outcomes. It emphasizes the impact of board composition on board effectiveness (Hambrick & Mason 1984; Finkelstein & Hambrick 1990).
- Social Network theory (4) describes the importance of unique resources and capabilities possessed by boards, such as knowledge, expertise, and networks. It explores how boards' resources contribute to competitive advantage and organizational performance (Brass et al. 2004; Kilduff et al. 2000).
- Institutional theory (2) examines the influence of institutional norms, rules, and pressures on board behaviour and decision-making. It explores how boards conform to institutional expectations, norms, and regulatory requirements (DiMaggio & Powell 1983).

Among others, Klepczarek (2023) and Sierra-Morán (2021) state that most studies chose a single perspective for the evaluation of the results although most of the studies in this selection of articles state that this field of research cannot be fully understood from a single theoretical point of view. Furthermore, the studies in this selection indicate there is a lack of psychological and social behavioral perspectives in most research and this is needed to understand the process of decision-making in the boards of directors.

Insights to use in the structured literature review

The preliminary research showed that the following concepts have been regularly investigated in this field: the characteristics of the board, the context of the board (influenceable, like the organization and less or non-influenceable, the sector or society), the effectiveness of the board and the mechanisms that influence the effectiveness of the board.

Based on these concepts the following sub-questions are formulated for the structured literature review:

What does science know about:

- the way factors of the board influence the effectiveness of the decision-making process?
- the way mechanisms in the boardroom influence the effectiveness of their decision-making process?;
- the way contextual factors influence the relationships between the factors and mechanisms in the boardroom on the effectiveness of their decision-making process?;

Another insight of the preliminary research is that the dynamics in the boardroom require a multi-theoretical approach. Many articles discussed research related to the direct relationship between boardroom factors and effectiveness. The insights from these studies repeatedly appear to be limited and highly dependent on (partly unknown or unclear) factors and variables that remained outside the specific research. The picture that emerges from the analysis of the literature is that new insight into this field can be found by combining insights from organizational science, economics, behavioral science and psychology.

In line with this, the structured literature review will also attempt to map which theoretical perspectives researchers have used to approach and understand the problem. This has led to two new sub-questions that will be examined during the structured literature review.

- What are theoretical perspectives that should be included to understand the research field?;
- What are directions for further research and future research approaches?

Finally, there is the issue of the scope of the research raised in the introduction. The dynamics surrounding the board of a start-up or a large multinational or a government organization that is under a public magnifying glass differs greatly. It is conceivable that different contexts require different factors for effective governance. It was decided not to limit the scope in the structured literature review. Where insights relate to a specific situation, this will be addressed and included in the evaluation of the data.

3. A Structured Literature Review Approach

In section 2 we described a preliminary literature review, however, to be able to develop a rigorous research approach for a PhD study, the next step is to execute a structured literature review. This is done to create the best possible overview of a substantial part of the available scientific literature on boardrooms.

The in section 2 described insights are used to evaluate the data in the next step, the structured literature review. This means an evaluation of the factors or characteristics in the boardroom and their influence on the effectiveness of the decision-making process in the boardroom. Besides this, the aim is to create an overview of 1) scientific gaps in this research field, 2) the best possible methods to close these scientific gaps, and 3) what theoretical frameworks are available and recommended for future research to close these gaps. For this purpose a meta-systematic literature review is the most appropriate instrument (Grant & Booth, 2009).

For the sake of rigor the results are analyzed in a structured and systematic way and other researchers were involved in the selection process. The benefits of executing a literature review in a systematic way were described amongst others by Cooper (1988) and Green et al. (2006).

Structured literature review

For our research we follow the PRISMA process (Liberati et al., 2009), which is a widely accepted framework for conducting systematic literature reviews. PRISMA stands for "Preferred Reporting Items for Systematic

Reviews and Meta-Analyses." It provides a step-by-step approach to ensure transparency, rigor, and reproducibility in systematic reviews. Here is a brief description of the PRISMA process:

- Identification of Research Question.
- Literature Search.
- Study Selection.
- Data Extraction.
- Quality Assessment.
- Data Synthesis.
- Results Reporting
- Discussion and Conclusion.

The process

Regarding the literature search the following process was followed:

First, 4 databases are selected based on the fact that they include journals that contain articles on boardrooms and corporate government from different specializations:

- Business Source Premier, a database which focuses on business and management literature.
- Academic Search Complete, this database covers a wide variety of academic disciplines including business and management.
- PsycINFO, specially selected because of the psychological angle on boardrooms and governance, such as organizational psychology, leadership, and decision-making processes within corporate settings.
- Web of Science, a database that provides access to a vast collection of scientific literature across multiple disciplines. It includes articles on business, management and boardrooms.

The query consists of two terms connected with a logical "AND". The first term of the query is a description of different ways a board or board of directors can be indicated. The second term of the query is indicating it must be some sort of a systematic literature review. Because there were a lot of studies selected concerning medical research (not the aim of the study) articles about 'patient'-s were excluded in the query.

As an example, the query for Academic Search Complete was constructed like:

`((Boardroom* OR "Board Room" OR "Board Rooms" OR (Board N3 (Director* OR Supervision*))) NOT Patient*) AND (((Review OR Overview) N4 (Systematic OR Literature OR Research* OR Critical* OR Finding* OR Scoping)) OR Cochrane OR Campbell)) NOT Patient*`

The first selection on different variants of the word *board* across the four databases resulted in more than 120.000 hits. The second query with the restrictions of peer-reviewed and structured literature review resulted in 1232 hits. The last query with the function undoubled (excluding duplicate articles) and without patient, resulted in a selection of 506 articles.

Inclusion criteria were as follows: 1) the title and abstract of papers should indicate the study was evaluating the functioning of boards and their effectiveness, 2) the articles must be a (structured) literature review and peer reviewed.

The studies that were conducted in a single sector or industry as well as studies conducted in a single country were excluded. After the selection process was concluded a list of 506 articles remained.

As a next step, one of the researchers did a review of all the titles and abstracts of the selected papers. Following this the total set was divided among four other researchers (each analyzed respectively 126, 126, 127, and 127 papers).

In the next step a subjective assessment was conducted. Criteria were:

Methodological well-executed/rigor, subjective (like systematic/objectified, reproducible, verifiable).

And the inclusion and exclusion criteria from earlier steps.

The five researchers involved pre-evaluated the manner in which they were selecting the articles. After this discussion each of the four researchers individually discussed the results of their set of papers with the main researcher that evaluated all articles. Those articles where the researchers had different opinions regarding

their relevance were discussed in more detail. The articles both researchers had the same opinion on, were excluded or included as evaluated by the researchers.

This resulted in a total of 74 articles discussed and finally a total of 93 articles in the final selection (see figure 1).

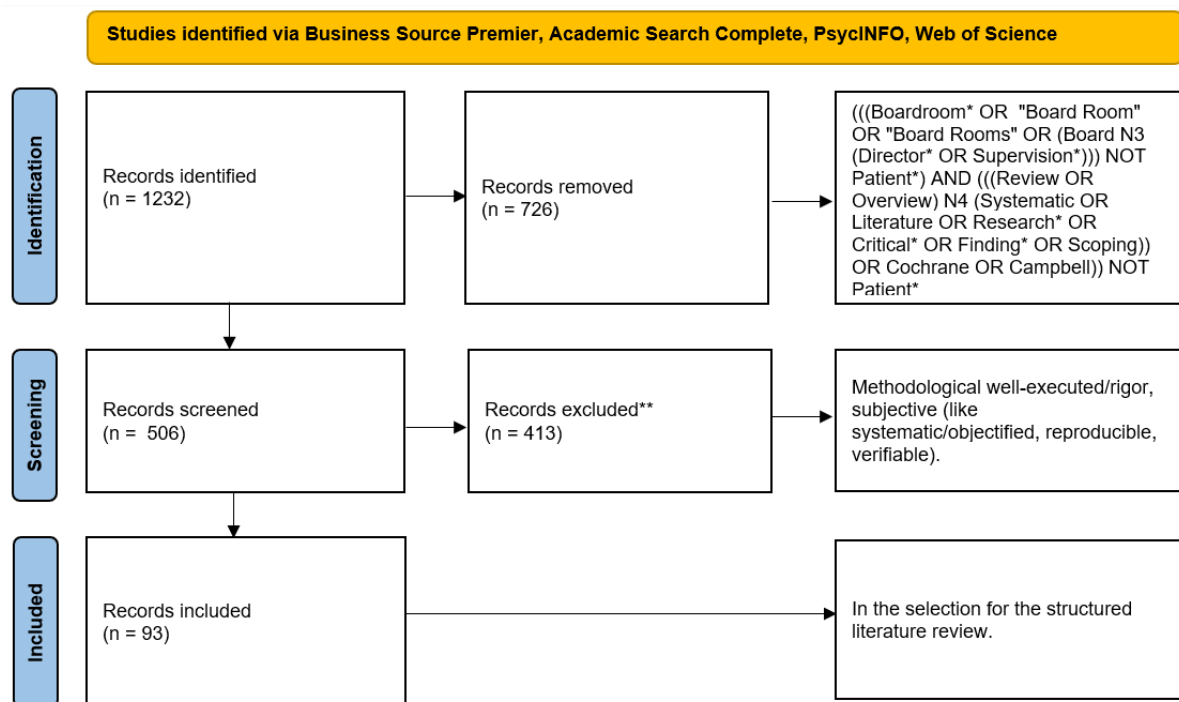


Figure 1: PRISMA flow diagram, the process in numbers

Next steps, analysing the data and reporting

The selected publications will be analyzed in depth, using qualitative data analysis software Atlas.Ti, which provides a platform for organizing the literature, coding key concepts, as well as exploring relationships and themes within and across the reviews. By systematically reading and coding the literature, relevant sections will be identified, key findings highlighted, and concepts across the reviews connected.

In any case included are methodological characteristics and some basic concepts and items found in section 2, such as:

- Characteristics of the methodology, number of studies involved, scientific philosophy and discipline;
- The following concepts and items:
 - factors and characteristics that were investigated in the studies on the effectiveness of the board
 - divided in sub-classes: individual member, board as a group, organizational and what were the findings of the relation with the effectiveness of the board (positive, negative, none);
 - mechanisms that influence the effectiveness of the board, like processes / committees / cultural aspects of the team, organization or context;
 - behavioural aspects on an individual level.
 - Contextual characteristics that were investigated and how they influence the effectiveness of the board (like cultural and institutional aspects) or how they feature conditions to the board;
 - Theories, perspectives or lenses single or multiple used to analyse the data in the study and how can these theories be categorized.

4. Follow-up Research in the Project

Although interesting starting points were found, still much is unclear about the total research area. It is however already clear (from almost every article in the selection of this preliminary research) that after the

structured literature review a follow-up step of this research must be done from a multi-perspective approach (Klepczarek, 2023; Zahra & Pearce, 1989; Dalton et al. 1998). The structured literature review will provide a more complete overview of the full set of perspectives to investigate this research field.

In this field of research, many studies are carried out into good observable and measurable characteristics or performance indicators. This resulted in well performed and executed research. However, this takes us only partially on the way to a better understanding of this field of research. The challenge now is to get more grip on the mechanisms that are significant but difficult to observe and measure (Klepczarek, 2023). The next step in this research project, will be an exploratory step to generate a new (more complete) theoretical framework about the relationships between decision-making processes of boards, context factors and their effectiveness. This new framework should be the base for a further step in this research project to build evidence that proves or disproves this framework.

In the further steps of this research project, the scope will be limited to keep it manageable. More specifically, the research field will be limited to a specific industry, so that some context-dependent variables become controlled variables. In addition, the effectiveness will be measured on the basis of a specific sub-goal of the organizations under investigation. This also gives the research project a better grip on the complex understanding of the effectiveness of boardrooms.

Acknowledgements

This research was conducted with funding by “Stichting Competens” in the Netherlands.

References

- Agarwal, S. & Singh A. (2020). Literature review on the relationship between board structure and Firm Performance. *International Journal of Business Ethics in Developing Economies*, 9(2).
- Banerjee, A., Nordqvist, M., & Hellerstedt, K. (2020). The role of the board chair—A literature review and suggestions for future research. *Corporate Governance: An International Review*, 28(6), 372-405.
- Bezemer, P. J., Pugliese, A., Nicholson, G., & Zattoni, A. (2023). Toward a synthesis of the board-strategy relationship: A literature review and future research agenda. *Corporate Governance: An International Review*, 31(1), 178-197.
- Bradshaw, P., Murray, V., & Wolpin, J. (1992). Do nonprofit boards make a difference? An exploration of the relationships among board structure, process, and effectiveness. *Nonprofit and voluntary sector quarterly*, 21(3), 227-249.
- Brennan, N. M. (2022). Is a Board of Directors a Team?. *The Irish Journal of Management*, 41(1), 5-19.
- Brown, G., & Peterson, R. S. (2022). Causes of Dysfunctional Culture. In *Disaster in the Boardroom: Six Dysfunctions Everyone Should Understand* (pp. 61-85). Cham: Springer International Publishing.
- Buse, K., Bernstein, R. S., & Bilimoria, D. (2016). The influence of board diversity, board diversity policies and practices, and board inclusion behaviors on nonprofit governance practices. *Journal of Business Ethics*, 133, 179-191.
- Callen, J. L., Klein, A., & Tinkelman, D. (2010). The contextual impact of nonprofit board composition and structure on organizational performance: Agency and resource dependence perspectives. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 21(1), 101-125.
- Canet, A. (2016). Groupthink in the Boardroom-The Good, the Bad and the Ugly. Available at SSRN 2839855.
- Cooper, H. M. 1988. “Organizing Knowledge Synthesis: A Taxonomy of Literature Reviews.” *Knowledge in Society* 1: 104–126. doi:10.1007/ BF03177550
- Coulson-Thomas, C. (2018). Teamwork, motivation, complexity and the Board. *Effective Executive*, 21(4), 56-69.
- Daily, C. M. (1996). ‘Governance patterns in bankruptcy reorganizations’, *Strategic Management Journal*, 17(5), pp. 355–375.
- Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic management journal*, 19(3), 269-290.
- Ees van, H., Gabrielsson, J., & Huse, M. (2009). Toward a behavioral theory of boards and corporate governance. *Corporate governance: An international review*, 17(3), 307-319.
- Erwin, C. O., Landry, A. Y., Livingston, A. C., & Dias, A. (2019). Effective governance and hospital boards revisited: Reflections on 25 years of research. *Medical Care Research and Review*, 76(2), 131-166.
- Fenwick, M., & Vermeulen, E. P. (2018). Evaluating the Board of Directors: International Practice. *Lex Research Topics in Corporate Law & Economics Working Paper*, (2018-6).
- Fuzi, S. F. S., Halim, S. A. A., & Julizaerma, M. K. (2016). Board independence and firm performance. *Procedia Economics and Finance*, 37, 460-465.
- Ghafran, C., & O'Sullivan, N. (2017). The impact of audit committee expertise on audit quality: Evidence from UK audit fees. *The British Accounting Review*, 49(6), 578-593.
- Grant, M. J., & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health information & libraries journal*, 26(2), 91-108.
- Green, B. N., Johnson, C. D., & Adams, A. (2006). Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *Journal of chiropractic medicine*, 5(3), 101-117.

- Garg, S., & Eisenhardt, K. M. (2017). Unpacking the CEO–board relationship: How strategy making happens in entrepreneurial firms. *Academy of Management Journal*, 60(5), 1828-1858.
- Guo, L., & Masulis, R. W. (2015). Board structure and monitoring: New evidence from CEO turnovers. *The Review of Financial Studies*, 28(10), 2770-2811.
- Heemskerk, E. M., Heemskerk, K., & Wats, M. M. (2017). Conflict in the boardroom: a participant observation study of supervisory board dynamics. *Journal of Management & Governance*, 21, 233-263.
- Herman, R. D., & Renz, D. O. (2000). Board practices of especially effective and less effective local nonprofit organizations. *The American Review of Public Administration*, 30(2), 146–160
- Jaskyte, K. (2018). Board attributes and processes, board effectiveness, and organizational innovation: Evidence from nonprofit organizations. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 29(5), 1098-1111.
- Judge, W. Q., & Talaulicar, T. (2017). Board involvement in the strategic decision making process: A comprehensive review. *Annals of Corporate Governance*, 2(2), 51-169.
- Judge, W. Q., Witt, M. A., Zattoni, A., Talaulicar, T., Chen, J. J., Lewellyn, K., ... & Van Ees, H. (2015). Corporate governance and IPO underpricing in a cross-national sample: A multilevel knowledge-based view. *Strategic Management Journal*, 36(8), 1174-1185.
- Klepczarek, E. (2023). Myths and ceremonies among the corporate governance institutions: introducing the concept of corporate governance culture. *Corporate Governance: The International Journal of Business in Society*, 23(1), 109-131.
- Labaki, R., & D'Allura, G. M. (2021). A governance approach of emotion in family business: Towards a multi-level integrated framework and research agenda. *Entrepreneurship Research Journal*, 11(3), 119-158.
- Leblanc, R., & Gillies, J. (2005). *Inside the boardroom: How boards really work and the coming revolution in corporate governance*. John Wiley & Sons.
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., ... & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Annals of internal medicine*, 151(4), W-65.
- Lin, C. P., He, H., Baruch, Y., & Ashforth, B. E. (2017). The effect of team affective tone on team performance: The roles of team identification and team cooperation. *Human Resource Management*, 56(6), 931-952.
- Lu, Y., Ntim, C. G., Zhang, Q., & Li, P. (2022). Board of directors' attributes and corporate outcomes: A systematic literature review and future research agenda. *International Review of Financial Analysis*, 84, 102424.
- Mgammal, M. H. (2022). Appraisal study on board diversity: Review and agenda for future research. *Cogent Business & Management*, 9(1), 2121241.
- Nicholson, G., Pugliese, A., & Bezemer, P. J. (2017). Habitual accountability routines in the boardroom: How boards balance control and collaboration. *Accounting, Auditing & Accountability Journal*, 30(2), 222-246.
- Perquin-Deelen, C. F. (2020). *Biases in de boardroom en de raadkamer: een juridische en filosofische analyse van de bestuurlijke taakuitoefening en rechterlijke beoordeling, mede aan de hand van een empirische studie*. Deventer: Wolters Kluwer.
- Petrovic, J. (2008). Unlocking the role of a board director: a review of the literature. *Management Decision*, 46(9), 1373-1392.
- Preston, J. B., & Brown, W. A. (2004). Commitment and performance of nonprofit board members. *Nonprofit Management and Leadership*, 15(2), 221–238.
- Puni, A., & Anlesinya, A. (2020). Corporate governance mechanisms and firm performance in a developing country. *International Journal of Law and Management*, 62(2), 147-169.
- Rao, K., & Tilt, C. (2016). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of business ethics*, 138, 327-347.
- Renz, D. O. (2016). Leadership, governance, and the work of the board. *The Jossey-Bass handbook of nonprofit leadership and management*, 127-166.
- Sierra-Morán, J., Cabeza-García, L., González-Álvarez, N., & Botella, J. (2021). The board of directors and firm innovation: A meta-analytical review. *BRQ Business Research Quarterly*, 23409444211039856.
- Schaedler, L., Graf-Vlachy, L., & König, A. (2022). Strategic leadership in organizational crises: A review and research agenda. *Long Range Planning*, 55(2), 102156.
- Wheelen, T. L., Hunger, J. D., Hoffman, A. N., & Bamford, C. E. (2017). *Strategic management and business policy* (Vol. 55). Boston: pearson.
- Yoon, N. (2021). Understanding theoretical orientation and consequences of board interlock: Integration and future directions. *Nonprofit Management and Leadership*, 31(4), 717-736.
- Zahra, S. A., & Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of management*, 15(2), 291-334.
- Zattoni, A., & Cuomo, F. (2016). An evolutionary overview of the ownership, governance and strategy of Mediobanca: From the kingmaker of Italian capitalism to a large financial conglomerate. *Handbook on Corporate Governance in Financial Institutions*. Cheltenham, Edward Elgar, 7-34.
- Zattoni, A., Witt, M. A., Judge, W. Q., Talaulicar, T., Chen, J. J., Lewellyn, K., ... & van Ees, H. (2017). Does board independence influence financial performance in IPO firms? The moderating role of the national business system. *Journal of World Business*, 52(5), 628-639.

Pre-Recruiting HR Marketing for new Gen Talent Acquisition: The Mediating Role of Word of Mouth

Sofia Panagiotidou and Dimitrios Mihail

Human Resource Management Lab, Department of Business Administration, University of Macedonia, Greece

pansof@uom.edu.gr (corresponding author)

mihail@uom.edu.gr

Abstract: The purpose of this study is to investigate how, at the pre-recruitment stage, product brand awareness and publicity of a company affect the knowledge of the company's Employer Brand and the intention to apply for a job in this company. Furthermore, it will be investigated whether these associations are strengthened by the mediating effect of the positive Word of Mouth about the company as a desired employer. The Structural Equation Modeling (PLS-SEM) software was used on a sample of 737 students and recently graduates from Greek public universities. Overall, the findings of our research indicate the impact of a company's product/service brand awareness on the formulation of positive comments about the company as an employer. Indeed, product knowledge, when linked to company publicity initiatives and both are leveraged in a general pre-recruiting marketing plan of the HR department, positive Word of Mouth (WOM) commentary is enhanced. The information that job seekers receive from employees' feedback helps them to gain practical and useful details about the work conditions and the opportunities for training and personal development within it. Moreover, through the descriptions of the employee experience in the company the job seekers' intention to search employment in this particular employer is strengthened. Furthermore, the findings of our study have important implications on how a company's HR departments should plan and organize their pre-recruitment marketing strategy in order to create an attractive image of the company as an employer for the new generations of candidates and activate them to search and apply for a job vacancy in this company. Despite methodological and contextual limitations, this study extends the most acknowledged and recent approaches in the pre-recruitment marketing literature, focusing on the mediating role of the Word of Mouth in order to provoke employer brand awareness and influence candidates decisions and behaviors.

Keywords: Pre-recruitment marketing practices, Word of Mouth, Employer brand, Training and development, Intention to apply

1. Introduction

As the effort of HR departments to attract and integrate young people with a high profile of knowledge and skills is intensifying, recruiters are looking for practices to influence the choices of job seekers so that they include their own company in the list of potential employers of choice (Srivastava and Bhatnagar, 2010). The actions to create a unique and attractive Employer Brand start in university environments where companies are looking for the new talents they want to recruit (Turban, 2001; Agrawal and Joseph, 2010). In this context potential applicants seek and evaluate practical and symbolic information from various sources, such as positive feedback from employees, and from prior knowledge about the company, as presented in its product identity and general publicity events (Lievens and Highhouse, 2003; Lievens 2007; Collins, 2007). Based in this information they choose as employers, companies that match their own culture that facilitates and encourages their personal and professional development (Tanwar and Kumar, 2019).

2. Conceptual Framework

In this attempt, HR corporate teams use the theoretical background provided by marketing and in particular the theory related to customer-brand equity considering that a job seeker makes decisions and behaves like a potential customer (Cable and Turban 2001; Lievens and Highhouse, 2003). Therefore, just as the company adopts specific marketing practices to influence, strengthen and retain its customer base, so too does the company's HR department designing recruiting actions to communicate the company's advantages as an employer to senior students and young graduates (Collins and Han, 2004; Collins, 2007). Prior knowledge about the company, at this stage of initial entry into the labour market, may come from non-recruitment sources of information, such as product brand awareness, and is linked to the company's general reputation (Cable and Turban, 2001). However, beyond the knowledge of the company's products, recruiters apply different pre-recruitment practices. Four main pre-recruiting practices are reported in the literature that vary according to prior or no prior knowledge about the company and require less or more effort on the part of the job seeker to search specific information about the job position and work environment (Collins and Stevens, 2002). Based on the aforementioned criteria, low information practices are the publicity that a company receives without paying a price for it, sponsorship and general advertising (Agrawal and Joseph, 2010; Collins

and Stevens, 2002). On the contrary, high-intensity information and activation practices for job seekers are Word of Mouth endorsements of employees about the company and job advertisements where the candidate can see detailed information and understand more fully the working conditions and prospects (Collins and Han, 2004). The exploitation of the appropriate pre-recruiting practice, depending on the cognitive maturity and familiarity of job seekers with the characteristics of the company as an employer, is the main challenge for HR departments. Research has shown that the power to influence the attitudes and actions of candidates is magnified when pre-recruiting practices are applied in combination (Collins and Stevens, 2002; Collins, 2007). In addition, their interaction with marketing activities like publicity to strengthen the corporate brand and product brand identities contribute to the formation of associative positive connotations for the company in the minds of job seekers.

Given the above, we attempt to investigate the following three hypotheses:

H1. A company's Product Brand awareness is positively related to its Publicity actions

H2. A company's Product Brand awareness is positively related to employee's positive Word of Mouth for this firm as an employer

H3. A company's Publicity actions are positively related to employee's positive Word of Mouth for this firm as an employer

As mentioned above, positive WOM from a person who had or has work experience in the company, is a strong catalyst for a job seeker to become interested in learning more information about the company's personality as an employer. Moreover, a factor that is part of the Employer Brand construct and has over time emerged as an important criterion of attractiveness is the company's investment in the training and development of its employees (Berthon et al, 2005; Bellou et al, 2015; Hillebrand and Ivens, 2012; Tanwar and Prasad, 2017; Sharma and Prasad, 2018). This dimension of a company's employment promise is an essential criterion for young employees and for those in the process of choosing an employer, as this provision is related to the personal satisfaction of individuals' career development expectations and the continuous upgrading of their professional profile (Huang and Lee, 2017; Zhu et al, 2014).

As has been shown in studies, when the person giving the recommendations has strong ties with the candidate then his/her comments carry particular weight, have a positive effect on the attractiveness of the company, and ultimately on the candidate's decision to apply for a job with the company (Van Hove, 2008; Sun et al, 2013). This impact seems to play an essential role in the pre-recruitment stage where passive job seekers first come into contact with a company through the feedback of its employees who may be fellow students or graduates of their school (Collins and Stevens, 2002). These encounters may be part of marketing practices, organised by the HR departments of companies, and take place at networking events or career days in universities (Agrawal and Joseph, 2010; Alashmawy and Yazdanifard, 2019). At other times, they may result from friends, relatives, or social media contacts of the job seeker in various communication environments, in person or via the internet. (Evertz et al, 2021; Melián-González and Bulchand-Gidumal, 2016).

Taking the above into account, we proceed to formulate the following two hypotheses:

H4. An employee's positive Word of Mouth is positively related to its Employer Brand dimension "Training and Development"

H5. An employee's positive Word of Mouth is positively related to a job seeker's Intention to Apply for employment in this company

The combination of instrumental and symbolic benefits that a company chooses to create its unique identity/image as an employer, i.e. to create its own Employer Brand, is initially aimed at enhancing its attractiveness to the audience it values as talent (Lievens and Highhouse, 2003). Employer branding is defined as the process by which the company in question seeks to achieve the above positive outcomes in terms of employee selection, as well as employee satisfaction and retention (Ambler and Barrow, 1996; Backhaus and Tikoo, 2004). The continuous training of employees, which involves their personal development and is related to their professional future, within or outside the company, is, as mentioned in previous paragraphs, a key element in encouraging the new generation of candidates (Tanwar and Prasad, 2017; Huang and Lee, 2017). As confirmed by surveys worldwide, the young job seekers will choose a company at the start of their career that provides them with systematic professional training and access to sources of knowledge updating and skills development (Sharma and Prasad, 2018; Bellou et al, 2015; Zhu et al, 2014).

Based on the above, we hypothesize:

H6. A company's Employer Brand dimension "Training and Development" is positively related to a job seeker's Intention to Apply for employment in this company.

Familiarity with the company's products and the positive publicity the company receives in the media are low information and involvement sources and can often substitute each other. (Collins, 2007). On the other hand, positive comments from employees are an important source in terms of shaping the beliefs and decisions of job seekers, as they contain detailed and in-depth information about the work environment. (Van Hove and Lievens, 2009; Keeling et al, 2013). The combination of the above sources in an early-recruitment plan has proven to contribute both to the recognition of the company's Employer Brand and the benefits it offers to its employees, as well as to the strengthening of the intention to apply for a job with it (Van Hove, 2008).

Considering the above, we formulate the hypothesis below:

H7. An employee's positive Word of Mouth mediates in the relationships between: a) a company's Publicity actions and the awareness of the Employer Brand dimension "Training and Development", b) the Product Brand awareness and a job seeker's Intention to Apply for employment in this company.

3. Methodology

3.1 Sample and Procedure

This survey was conducted during the spring semester of 2021 and 737 electronic questionnaires were collected from students and young graduates of Greek universities.

3.2 Measures

To measure all survey data, we have used a five-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. Also, an "Exploratory Factor Analysis (EFA) was conducted via SPSS v.22 ("maximum likelihood extraction method"; "promax rotation"; "cutoff value=0.50").

In detail, a company's product brand was assessed by three-item scale originally developed by Collins (2007). These items focused on company's product brand awareness in pre-recruiting context. A company's publicity connected with its pre recruitment actions was assessed using a two - item scale developed by Collins and Stevens (2002). Positive Word-of-Mouth (WOM) was assessed using a three -item scale, originally developed by Van Hove (2008). "Training and Development" as a company's Employer Brand dimension was assessed by two items remained after the EFA analysis, based on the six item scale originally developed by Tanwar and Prasad (2017). "Intention to apply" was assessed with four items of the frequently used five - item scale originally developed by Highhouse et al (2003).

3.3 Statistical Analysis and Analytical Procedures

In assessing our model, we used Structural Equation Modeling (SEM) with the use of SmartPLS 3.0 software (Ringle et al, 2015).

In the Figure 1 we present the conceptual framework of the proposed model.

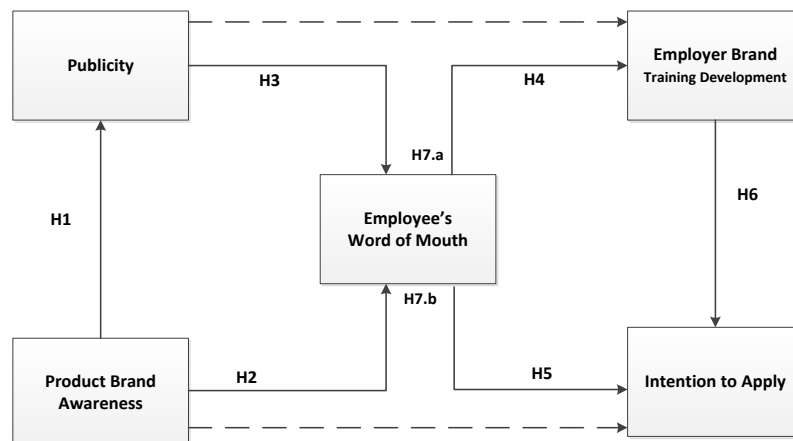


Figure 1: The conceptual model

4. Results

All factor loadings were above the 0.5 threshold whereas Composite Reliability (CR) scores above the threshold of 0.50 and Average Variance Extracted (AVE) scores above the threshold of 0.70 in four of the five variables (one scores at 0.670 and five score up to 0.80). Hence, convergent validity was established. Regarding discriminant validity, we use two criteria available in SmartPLS (Henceler et al, 2015), namely the “Fornell-Lacker criterion” and the “Heterotrait-Monotrait ratio” (HTMT<0.85). According all the results, as these values were below the critical value of 0.85, discriminant validity was supported. Multicollinearity between constructs is examined through the Variance Inflation Factors (VIF) (Cenfetelli and Bassellier, 2009), in order to examine common method bias. As all VIFs calculations in our inner model they resulting from full collinearity test were below the 3.3 threshold the model can be considered free of common method bias (Kock, 2015).

Table 1 presents the “means”, “standard deviations”, “reliabilities” (in parentheses) and “bivariate correlations” among the study variables. As demonstrated in Table I, all the Cronbach’s alpha coefficients were greater than 0.70, while four were greater than 0.80 confirming that internal consistency reliability of the proposed model was excellent.

Table 1: Means, SDs and correlations (Cronbach’s α is in parentheses).

	Mean	SD	1	2	3	4	5
EB_TrDev	4.46	0.61	(0.816)				
GeneralWOM	4.06	0.61	0.249**	(0.861)			
Intention to Apply	4.48	0.60	0.190**	0.222**	(0.889)		
Product Brand	3.43	0.72	0.144**	0.255**	0.105**	(0.754)	
Publicity	3.05	0.82	0.149**	0.250**	0.068**	0.518**	(0.847)

Note: N=737, SD: standard deviation

*indicates significant paths: * $p<0.05$, ** $p<0.01$, *** $p<0.001$, ns= not significant

To analyze the hypotheses in the structural model, we ran the full model (Figure 2) with a bootstrapping procedure that used 2000 randomly drawn samples with replacement. The path coefficients and their significance level and the P-values of the inner model structure are depicted in Figure 2

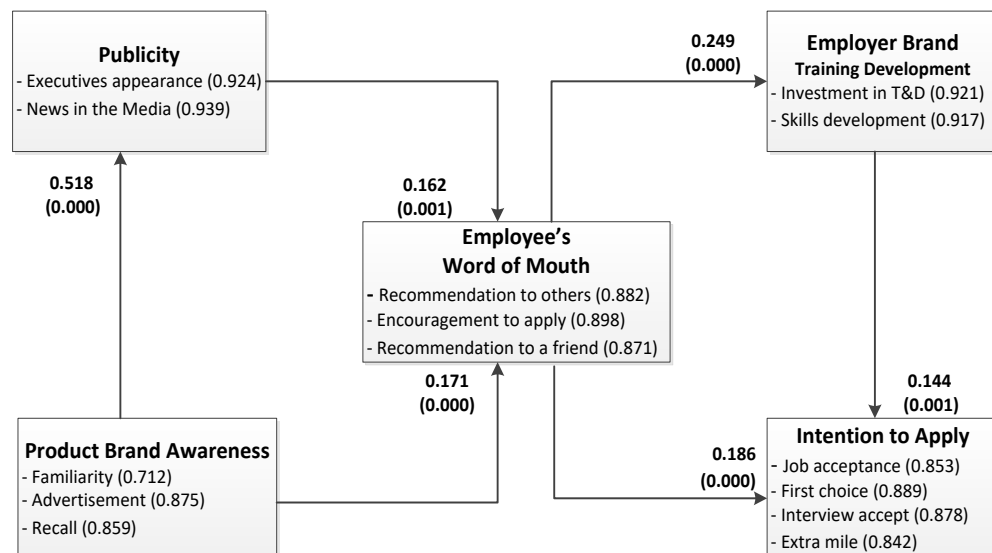


Figure 2: The Structural Model

Overall, Figure 2 shows that Product Brand is positively related to both company’s Publicity ($\beta= 0.518$, $p<0.000$) and General WOM positive comments ($\beta= 0.171$, $p<0.000$) and thus supporting Hypotheses 1, 2.

Similarly, company's Publicity is significantly related to General WOM ($\beta = 0.162$, $p < 0.001$) supporting hypothesis 3 and General WOM is positively related to both "Training and Development value" as a Employer Brand dimension namely the EB_TrDev ($\beta = 0.249$, $p < 0.000$) and Intention to Apply ($\beta = 0.186$, $p < 0.000$) supporting hypotheses 4 and 5. In addition, hypothesis 6 suggests that EB_TrDev value is positively related to candidates Intention to Apply ($\beta = 0.144$, $p < 0.002$) so this sixth hypothesis is also supported. Finally, the effect of Product awareness on the Intention to apply is fully mediated by Word of Mouth ($\beta = 0.033$, $p = 0.006$) so as the Publicity actions, on the Employer Branding-Training and Development ($\beta = 0.041$, $p = 0.004$) supporting both hypotheses H7.a and H7.b. Additionally, from the model's analysis we extract some interest findings that we take into consideration in our result interpretation although we had not included them in our hypotheses. Analytically, Publicity mediates partially and positively to the relationship between Product Brand and General WOM ($\beta = 0.084$, $p = 0.001$). In addition, EB_TrDev mediates partially and positively to the relationship between General WOM and the Intention to Apply ($\beta = 0.036$, $p = 0.006$). In the Table 2, we present the mediation effects between the model's variables.

Table 2: Mediation effects

	Estimate	T-statistic	P-value	Mediation
Product Brand -> GeneralWOM -> Intention Apply	0.033	2.760***	0.006	Full
Publicity -> GeneralWOM -> EB_TrDev	0.041	2.884***	0.004	Full
Product Brand -> Publicity -> GeneralWOM	0.084	3.213***	0.001	Partial
GeneralWOM -> EB_TrDev -> Intention Apply	0.036	2.769***	0.006	Partial

5. Discussion

This study contributes to the growth of the HR marketing literature by further illuminating the underlying mechanisms and practices that HR departments have in their arsenal to create a positive image of their company as an employer. We investigated in detail the interaction between prior knowledge of product branding and the positive publicity a company has in shaping an environment of positive comments about the company as a good working environment. Of the aforementioned pre-existing knowledge and experiences that a potential candidate may have, in order to choose the right employer, the mediating role of positive Word of Mouth from employees was particularly studied. To begin with, in line with previous studies (Collins and Stevens, 2002; Collins, 2007), the findings of our study show that individual familiarity with the company's products/services, through advertisements, personal use and a strong corporate brand, act as triggers of initial interest in the company. Also, the presence of the company's executives and its positive visibility on the media contribute to the formation of a positive image. Both of the above, without being basic pre-recruitment tools as they are essentially marketing techniques, are adopted by the company's HR at the pre-recruitment stage. The objective in this phase is to enhance the reputation of the company's brand and to use them as sources of interest for job seekers to start looking for the company as a possible, future employer (H1).

The previously mentioned practices of low information about the company as an employer are positively and significantly related to the positive feedback of the company's employees, thus confirming hypotheses H2 and H3. Positive web or face to face Word of Mouth is part of the high information tools for candidates as through it candidates learn about the actual employment conditions in the company (Van Hove and Lievens, 2007). As has been proven many times, employee feedback influences job seekers' decisions to seek detailed information about benefits, such as investment in employee training and development and other employment benefits in the company (H4). In addition, positive Word of Mouth directly influences the intention to apply for a job in a company (H5). Furthermore, knowledge of the company's employer brand, which captures the company's promise to potential and existing employees, has a positive and direct effect on job seekers' intention to apply (H6).

At this point, it should be noted that for the final intended result of forming positive attitudes and intentions of job seekers towards the company as an employer of choice, the direct effect of the low- intensity practices is not sufficient, as the information they contain does not provide data for evaluating the working environment. The necessary link in the sequence of actions to enhance the attractiveness of the company is the positive feedback from the company's employees or from people, such as interns, who have had some kind of work experience in the company. Moving a step further, this study shows that employees' Word of Mouth plays an absolutely mediating role in candidates' decisions and reactions (H7).

In summary, we believe that our research findings confirm the fact that application intentions is achieved through a targeted corporate employer branding strategy where training and development emerges, as confirmed by many studies and practitioner researches, as a key attraction factor for students and young graduates. Furthermore, the image of a company, which differentiates it from other potential employers and enhances its profile as a desirable work destination, is important to meet the expectations of the new generation of candidates in relation to the work environment they wish to work in. It is equally important that this image should be promoted through the appropriate communication channels, such as employees' Word of Mouth, which the company uses as a means of informing and interacting with the young job seekers. In these conditions of interaction and information searching, the quality and quantity of information about jobs, as well as the way employees approach candidates, contribute to building the company's image and, ultimately, to enhancing awareness of its employer brand and generating application intentions (Yu et al, 2022)

6. Practical Implications and Limitations

In order to successfully attract new generation talent, companies should invest in both recruitment practices and non-recruitment information sources from which potential candidates have formed a prior image of the company. The reputation of a company's products/services can serve as a starting point for the formation of positive impressions of a company and recruiters should take this into account when developing their strategy. In addition, the use of positive publicity through the media can motivate individuals to seek more information about the advantages of the company as an employer. The aforementioned low-intensity information sources have a significant impact on shaping the attitudes and intentions of candidates when combined with Word of Mouth endorsements from former and current employees, interns, alumni etc.

Although we achieved the goal of our research to contribute to the research field of employee recruitment, some limitations do not allow us to generalize the results. In detail, the survey was conducted among senior students and recent graduates from Greek universities. It is possible that extending the survey to all student years and to graduates with some significant work experience, e.g. 3+ years, would reveal different values in the relationships and interactions between the controlled variables. In addition, in our own assessment, we investigate how product brand awareness and a particular pre-recruitment practices namely publicity and Word of Mouth influence job seekers perceptions and behaviors. We think it would be quite interesting to investigate in the future how corporate brand awareness and other recruitment practices affect job seekers' intentions to apply and actual applications for jobs with the organization. Finally, given the "explosion" of online commentary on employers by their employees and its influence on the opinions and attitudes of job seekers, we suggest future research in this field. In this way, we believe that the dynamics of word of mouth in recruiting processes will be more fully illustrated.

References

- Agrawal, R.K., & Joseph, M. (2010). Early recruitment practices in Indian B-school campuses and application intentions: role of word-of-mouth endorsements. *International Journal of Indian Culture and Business Management*, 3(6), 684.
- Ambler, T., & Barrow, S. (1996). The employer brand. *Journal of Brand Management*, 4(3), 185–206.
- Backhaus, K., & Tikoo, S. (2004). Conceptualizing and researching employer branding. *Career Development International*, 9(5), 501–517.
- Bellou, V., Chaniotakis, I., Kehagias, I., & Rigopoulou, I. (2015). Employer Brand of Choice: an Employee Perspective. *Journal of Business Economics and Management*, 16(6), 1201–1215.
- Berthon, P., Ewing, M., & Hah, L.L. (2005). Captivating company: dimensions of attractiveness in employer branding. *International Journal of Advertising*, 24(2), 151–172.
- Cable, D.M., & Turban, D.B. (2001). Establishing the dimensions, sources and value of job seekers' employer knowledge during recruitment. *Research in Personnel and Human Resources Management*, 20(1), 115–163.
- Cenfetelli & Bassellier.(2009). Interpretation of Formative Measurement in Information Systems Research. *MIS Quarterly*, 33(4), 689.
- Collins, C.J. (2007). The interactive effects of recruitment practices and product awareness on job seekers' employer knowledge and application behaviors. *Journal of Applied Psychology*, 92(1), 180–190.
- Collins, C.J., & Han, J. (2004). Exploring Applicant Pool Quantity and Quality: The Effects of Early Recruitment Practice Strategies, Corporate Advertising, and Firm Reputation. *Personnel Psychology*, 57(3), 685–717.
- Collins, C.J., & Stevens, C.K. (2002). The relationship between early recruitment-related activities and the application decisions of new labor-market entrants: A brand equity approach to recruitment. *Journal of Applied Psychology*, 87(6), 1121–1133.
- Evertz, L., Kollitz, R., & Süß, S. (2021). Electronic word-of-mouth via employer review sites – the effects on organizational attraction. *The International Journal of Human Resource Management*, 32(16), 3428–3457.

- Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Highhouse, S., Lievens, F., & Sinar, E.F. (2003). Measuring Attraction to Organizations. *Educational and Psychological Measurement*, 63(6), 986–1001.
- Hillebrandt, I., & Ivens, B. S. (2012). How to measure employer brands? The development of a comprehensive measurement scale. *Marketing Theory and Applications*, 23, 52–61.
- Huang, H. C., & Lee, Y. D. (2017). A Study of Indigenous Measuring Factors for Employer Brand Attractiveness in Taiwan: Comparative Analysis of Academy and Industry Experts. *IMPACT: International Journal of Research in Business Management*, 5(11), 11–20.
- Keeling, K.A., McGoldrick, P.J., & Sadhu, H. (2013). Staff Word-of-Mouth (SWOM) and retail employee recruitment. *Journal of Retailing*, 89(1), 88–104.
- Kock, N. (2015). Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach. *International Journal of e-Collaboration*, 11(4), 1–10.
- Lievens, F. (2007). Employer branding in the Belgian Army: The importance of instrumental and symbolic beliefs for potential applicants, actual applicants, and military employees. *Human Resource Management*, 46(1), 51–69.
- Lievens, F., & Highhouse, S. (2003). The Relation of Instrumental and Symbolic Attributes to a Company's Attractiveness as an Employer. *Personnel Psychology*, 56(1), 75–102.
- Melián-González, S., & Bulchand-Gidumal, J. (2016). Worker word of mouth on the internet: Influence on human resource image, job seekers and employees. *International Journal of Manpower*, 37(4), 709–723.
- Ringle, C.M., Da Silva, D., & Bido, D.D.S. (2014). Modelagem de Equações Estruturais com Utilização do Smartpls. *Revista Brasileira de Marketing*, 13(2), 56–73.
- Sharma, R., & Prasad, A. (2018). Employer brand and its unexplored impact on intent to join. *International Journal of Organizational Analysis*, 26(3), 536–566.
- Srivastava, P., & Bhatnagar, J. (2010). Employer Brand for Talent Acquisition: An Exploration towards its Measurement. *Vision: The Journal of Business Perspective*, 14(1–2), 25–34.
- Sun, T., Ayoun, B., & Calhoun, J. (2013). The Effect of Organizational Commitment on Word-of-Mouth Intentions in Recruitment in China. *Journal of Human Resources in Hospitality & Tourism*, 12(2), 192–216.
- Tanwar, K., & Kumar, A. (2019). Employer brand, person-organisation fit and employer of choice: Investigating the moderating effect of social media. *Personnel Review*, 48(3), 799–823.
- Tanwar, K., & Prasad, A. (2017). Employer brand scale development and validation: a second-order factor approach. *Personnel Review*, 46(2), 389–409.
- Turban, D.B. (2001). Organizational Attractiveness as an Employer on College Campuses: An Examination of the Applicant Population. *Journal of Vocational Behavior*, 58(2), 293–312.
- Van Hove, G. (2008). Nursing recruitment: relationship between perceived employer image and nursing employees' recommendations. *Journal of Advanced Nursing*, 63(4), 366–375.
- Van Hove, G., & Lievens, F. (2009). Tapping the grapevine: A closer look at word-of-mouth as a recruitment source. *Journal of Applied Psychology*, 94(2), 341–352.
- Van Hove, G., & Lievens, F. (2007). Investigating web-based recruitment sources: Employee testimonials vs word-of-mouth. *International Journal of Selection and Assessment*, 15(4), 372–382.
- Yu, K. Y. T., Goh, K. H., & Kawasaki, S. (2022). Investigating electronic word-of-mouth on social media: An eye-tracking approach. *Human Resource Management*, 61(5), 599–616.
- Zhu, F., Wang, Z., Yu, Q., Hu, T., Wen, Y., & Liu, Y. (2014). Reconsidering the Dimensionality and Measurement of Employer Brand in the Chinese Context. *Social Behavior and Personality: an international journal*, 42(6), 933–948.

HR Analytics in the Commercial Aviation Sector: A Literature Review

António Pimenta de Brito^{1,2} and Maria José Sousa¹

¹BRU-ISCTE, Lisbon, Portugal

²ESCAD-IP Luso, Lisbon, Portugal;

acpbo@iscte-iul.pt

p6326@ipluso.pt

maria.jose.sousa@iscte-iul.pt

Abstract: HR Analytics is the area of Human Resources Management (HRM) that uses the techniques of artificial Intelligence, social sciences, and innovation to extract, treat, and present data for decision-making. This has been a big trend in HR in recent years, with already business cases, academic studies, and industry applications, but it is still in an early stage of development. The commercial aviation industry has people at the heart of its strategy, as it is a people-to-people service. But there are no satisfied customers without satisfied employees. In addition, the topic of aviation safety is a central one, and the sector has extensive regulations on the subject. Aviation safety is also based on human-machine interaction and crew resource management (CRM). People must therefore be in the core strategy of aviation companies because, for the provision of their service, the human factor in the interaction with the machine, the team, and the customer is a critical success factor. An appropriate approach to HR Analytics is to start with the problems that the business faces and, from there, create indicators and models that can measure them. In this paper, a sectoral and problem-based HR analytics is discussed, which is one of its main contributions. HR analytics techniques are descriptive, predictive, and prescriptive. Starting from the nature of the air operation and its problems, HR analytics is an essential strategy to better know and act on the evidence of aviation service and operation. The purpose of this publication is to understand what academic studies exist on the applications of HR Analytics to the aviation industry. Through a literature review, it was concluded that the aviation sector has also few academic studies about HR analytics; however, there are already some indicators and models that can point in the right direction for the future. This is an area that can help measure performance indicators of HR policies and provide management with important data for decision-making in human resources management. The results of this research are presented, future research paths are suggested, and the limitations of this study are pointed out.

Keywords: Human resources management, HR analytics, Aviation, Literature review, Strategy, KPI

1. Introduction: HR Analytics

From a purely administrative approach to human resources management in the past, people management started to be considered a key partner in the business strategy. People have gone from being mere resources to a source of competitive advantage for the organization. In knowledge societies today, human resources have a strong strategic component in business.

Since the beginning of the millennium, there has been greater pressure on human resources departments to show an impact on organizational performance. In order to evaluate this performance, ways of evaluating performance and useful indicators emerged that could measure various indicators of people management (Ergle, Ludviga, and Kalvina, 2017). These are ways of quantifying human resource management activities (Bassi, 2011; Fitz-Enz, 2010). Examples of metrics are, for example, retention rate, turnover rate, and cost of hire, but these data being useful, they are only one part of analytics. That data is descriptive; with analytics, the aim is higher and the scope is larger. Insights are powerful inputs to business and decision-making that are not evident in simple raw data outputs. Analytics is when a predictive component is added. Through data and other information, comparisons, and correlations, we are able to generate models that predict a particular phenomenon from the data. So analytics is less about the past and more about predicting the future (Ergle, Ludviga, and Kalvina, 2017).

According to Tursunbayeva *et al.* (2018, p. 231), HR Analytics, or "People Analytics", "is an area of HRM practice, research, and innovation concerned with the use of information technologies, descriptive and predictive data analytics, and visualization tools for generating actionable insights about workforce dynamics, human capital, and individual and team performance that can be used strategically to optimize organizational effectiveness, efficiency, and outcomes, and improve employee experience". According to the Global Human Capital Trends survey (Deloitte Insights, 2018), 84% of respondents reported HR Analytics as being important or very important, making it the second highest ranked HR trend (Tursunbayeva *et al.*, 2021). More recently, NTT Data conducted a survey of 70 companies in Portugal and concluded that only 4% admitted having a high level of maturity in HR

Analytics (NTT Data, 2023). By maturity, they meant using the predictive component to create insights for decision-making in HR.

The big data revolution also has echoes in people management. In a modern approach to HRM in which people are the competitive advantage of the organization (Sullivan, 2013), similarly to marketing, which aims to put the customer first, in the HR area, the internal customer is the one the company wants to serve. To serve, the company needs to know who it serves. Kitchin (2014, p. 68) describes Big Data with the following characteristics: "huge in volume, high in velocity, diverse in variety, exhaustive in scope, fine-grained in resolution, relational in nature, and flexible in trait".

In the field of business and society, for example, in the consumer goods distribution sector, a supermarket that receives thousands of customers a day. At one point, it was necessary to store and process the amount of data generated by millions of transactions, whether the amounts spent, the items purchased, the time the purchase was made, the buyer profile, etc. All data with value for the CRM (Customer Relationship Management) systems that allowed one-to-one marketing up to the latest Big Data concept, integrating artificial intelligence and predictive models. Through patterns and associations, how will managers be able to anticipate the new consumption trend? This is one of the questions that can be raised by a Big Data strategy. Through this data, managers can predict, based on the type of items purchased, which item the customer will buy next, what psychographic profile can be drawn, and so on.

With the rise of the internet came the data revolution. In the first phase, the so-called Web 1.0 was read-only, with the passive participation of the user, without being able to develop and publish content. In the second phase came the revolution of social networks with high interactivity and user participation in the production of contents (Almeida, 2017)—the Web 2.0. With Web 2.0 came the revolution of content, but the majority of all that data tends to be unstructured. With Web 3.0 and especially Web 4.0, develop tools and methodologies are developed that would turn this data, from unstructured to structured, from raw data, into valuable knowledge to generate useful insights for industry and for scientific research, be it in the natural sciences or in the social sciences.

People management cannot ignore the need to make decisions based on evidence and use more than common sense. HRM can take advantage of the powerful tools of big data, which opens up a whole new range of sources of evidence.

Web 4.0 has several definitions and encompasses several dimensions, and each of them offers a different but complementary view of the 4.0 paradigm. Social networks and technologies such as the Internet of Things, Big Data, artificial intelligence, and M2M (machine-to-machine communication) offer a comprehensive image of the Web 4.0 application (Almeida, 2017; Brito, 2022).

The National Bank of Australia (Green, 2020a) has demonstrated that a highly motivated and involved employee influences the client and makes him more satisfied. The next question was, "What causes this?" And it turned out to be the leaders, so it was decided to select better leaders and provide them with better training and support. The National Bank of Australia, therefore, believes it will achieve these results. This value chain is created for everyone—employees and customers. This example shows that the organization can only apply measures and make decisions based on verified evidence from the data.

However, despite the buzz around the topic of HR Analytics, the implementation of this technology in companies could be more agile than expected. The reasons for this are the lack of skills in the technical areas of artificial intelligence and social sciences in HR departments, little sponsorship and interest from managers, risks related to privacy and data security, and high investment in IT infrastructure and means in HR (Marler and Boudreau, 2016).

There is some scientific and industry consensus that there are various stages of HR Analytics development in companies (Margherita, 2022; NTT Data, 2023). These stages express levels of maturity and difficulty in analyzing, processing, and extracting value from the data. As stated, analytics is more than the past; it is also important to predict the future. The various stages of development are descriptive, prescriptive, and predictive (Davenport, 2013; Roy *et al.*, 2022), in this order of difficulty, complexity, and value created. Descriptive analytics is the most elementary stage of HR analytics management and is concerned with "what happened, why it happened, and what is happening." It refers to human resources metrics such as head count, age of employees, salary, geographic origin, gender, etc. Predictive analytics aims to answer questions such as "what will happen and why will it happen in the future". In this approach, using the data and using statistical and artificial intelligence approaches, it is possible to predict certain trends and behaviors related to the workforce. This is

the most difficult and valuable approach to achieve and one that abounds less in the reality of HR departments, as it is the one that requires the most knowledge and complexity in the treatment of data. Finally, prescriptive analytics aims to answer questions such as "what should I do and why should I do it?" (Davenport, 2013; Margherita, 2022; NTT Data, 2023; Roy *et al.*, 2022).

Starting from the premise of Rasmussen (2015), which proposes an HR Analytics approach that focuses on business problems, the sectoral analysis of the implementation of HR Analytics becomes essential because each professional sector has different problems and specificities. The proponent of this paper has worked in the aviation industry for about 10 years and has a personal idea of the problems faced in the business. Often, a problem encountered in the HR analytics approach is that it is not only detached from business problems but also that this area is too closed in the human resources department (Green, 2020a; Rasmussen, 2015), when there should be contact and dialogue with the different departments of the company, from the commercial area to operations. It is equally important not to have an uncritical or random investigation of the data but an approach based on business problems. Thus, with this dialogue, the strategic alignment of human resources with the business strategy is adopted, a strategic perspective of HR analytics management is adopted, and this can be a true tool in decision-making and in the creation of value not only for people but also for the business (Gabanová, 2012).

In this study, it is proposed to look at the aviation sector and understand, firstly, what literature exists on the implementation of HR Analytics to address the problems and challenges of the sector. This publication will review the literature in two of the main scientific repositories, WOS (Web of Science) and SCOPUS. From this research, it will be possible to understand what studies and applications of this approach exist, with the objective of guiding new research paths in the HR Analytics field and in the commercial aviation sector's HR management. Secondly, a problem-based HR analytics sectoral analysis is proposed.

2. Methodology

The methodology adopted for this literature review was to search two of the most prestigious scientific repositories, WOS and SCOPUS, for literature related to HR Analytics applied to the aviation sector. Based on the suggestion of Margherita (2022), the term "HR Analytics" was used, as it is the most commonly used term in the most recent literature on this topic. In the search engines of the respective repositories, the following search terms were used: "HR Analytics + Aviation" and the search term "Big Data AND Aviation". The search term "Big Data AND Aviation" was based on the study of Sousa *et al.* (2019), applied to the health sector. The filters applied were papers found in English; the terms should appear in the title; and only scientific peer-reviewed publications from 2015 until 2023. After this search, the papers were analyzed, with the results resumed in the "Results and Discussion" section ahead in this paper. A previous theoretical contribution in this paper is the need for more research in HR analytics. As a problem-based approach is necessary, each sector faces very specific business and people management problems, so research and the study of applications for the industry must be analyzed in this way. In addition, more case studies are needed on the applications of HR analytics to the concrete reality of companies (Margherita, 2022). Below, in Figure 1, is the conceptual model developed to carry out this publication.

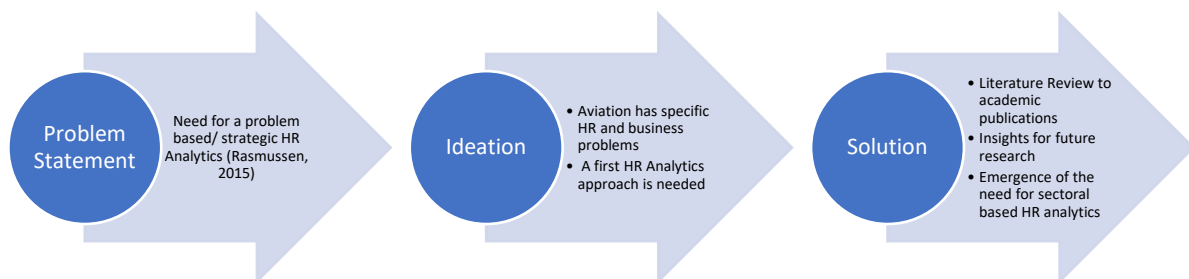


Figure 1: Conceptual model of the paper

Regarding the steps followed to carry out the literature review, the research question (RQ) will be the beginning, and it is: "What is the existing academic literature on HR Analytics applied to the commercial aviation Sector?". The methodology of the literature review will be used to answer this question. From the results obtained, conclusions will be drawn about the study. The initial and most appropriate scientific approach to knowing

something about a topic that is not known is to start the investigation with a literature review. Below is a schematic with the steps followed to perform this literature review (Figure 2).



Figure 2: Steps taken to complete the literature review

3. Results and Discussion

In this literature review, a main conclusion was drawn. There is also few academic literature on HR Analytics in the specific field of aviation. In the search done in two of the most important scientific repositories, WOS and Scopus, for the search term "HR Analytics + Aviation", there were 0 (zero) results. If the same search term is present in "all fields" of the search engine, then two results are retrieved. For the search term "Big Data AND aviation," there were 18 results in WOS, resulting in 12 valid In total, 12 + 2 were validated, or 14 papers. The search term "Big Data AND Aviation" was based on the study of Sousa *et al.* (2019). The filters applied to the search were: papers found in English; the terms should appear in the title; only scientific peer-reviewed publications from 2015 until 2023. After this search, the papers were analyzed, with the results summarized below in Table 1.

Table 1: Results of the Literature Review for "Big Data + Aviation" and "HR Analytics + Aviation"

	Title	Author	Findings	HRM-related (Y/N)	HR Metrics and Analytics
1	Airline Route profitability analysis and Optimization using BIG DATA analytics on aviation data sets under heuristic techniques	Kasturi, E., <i>et al.</i> (2016)	Algorithms that optimize flight routes	N	Operational staff cost Aviation Crew Cost
2	Development of a Data Fusion Framework to Support the Analysis of Aviation Big Data	Mangorrey, E. <i>et al.</i> (2019)	Algorithms that predict weather-related ground delay programs	N	None
3	Big Data and Data Analytics in Aviation (Advances in Aeronautical Informatics)	Burmester, G., <i>et al.</i> (2018)	Theoretical	N	Pilot and crew safety
4	Big data and a smart aviation information management system	Dou, X. (2020)	Areas of study and methodology for big data in aviation	N	Crew management
5	Big Data Analytics on Aviation Social Media: The Case of China Southern Airlines on Sina Weibo	Chen, S., Huang, Y., and Huang, W. (2016)	Social Media Analytics passenger value model	N	none
6	Cross-Platform Aviation Analytics Using Big-Data Methods	Larsen, T. (2022)	Cloud-based data analytics	N	Air Safety Report Databases
7	Flight Delay Prediction Based on Aviation Big Data and Machine Learning	Gui, G. <i>et al.</i> (2019)	Prediction of flight delays based on Machine Learning	N	none
8	Knowledge-Based Retrieval Scheme From Big Data for the Aviation Industry	Singh, A., and Kaushik, A. (2015)	Methodological Scheme for Data Retrieval	N	none

	Title	Author	Findings	HRM-related (Y/N)	HR Metrics and Analytics
9	The Establishment of an LTO Emission Inventory of Civil Aviation Airports Based on Big Data	Lu, C., <i>et al.</i> (2017)	Using Big Data to calculate LTO emissions in Airports	N	none
10	Machine Learning-Aided Air Traffic Flow Analysis Based on Aviation Big Data	Gui, G. (2020)	Air Traffic Flow Prediction	N	none
11	Predictive Analytics with Aviation Big Data	Ayhan, S. <i>et al.</i> (2022)	Air Traffic Predictions and Flight Plans	N	None
12	Research on Technology Trends for Civil Aviation Safety Based on Big Data Analysis	Yuan, Y., Yu, J., and Zhang, Y.	Aviation Safety	N	None
13	Role of HR metrics in enhancing firm performance at selected UAE Airline Companies	Hazarika <i>et al.</i> (2019)	Relationship between employee strength and financial results	Y	Predictive model
14	Turning Data into valuable insights: the case study of an aviation sector company	Ergle, Ludvina, and Kalvina, 2017	Information, teamwork, and remuneration are correlated with engagement and commitment.	Y	Predictive model

After this literature review search, the main conclusion is that the majority of the papers found were about applications of artificial intelligence to the operational area of aviation, not the human area. Although in the area of people management, the literature review of the papers sought to find some HR dimensions and measures, mainly "crew management", "crew cost", "crew safety" and "air safety crew factors," all from a descriptive perspective, not a predictive or prescriptive perspective. The only two results mentioned with the predictive approach of HR analytics appeared when "all fields" of search were activated in WOS. The papers are about predictive HR analytics in aviation (Ergle, Ludvina, and Kalvina, 2017; Hazarika *et al.*, 2019). The study by Ergle, Ludvina, and Kalvina (2017) did a case study of an aviation company and demonstrated the usefulness of HR Analytics. Using interviews and SEM (structural equation modeling), it is intended to demonstrate the usefulness of HR Analytics in the aviation sector. It was concluded through the interviews that recruitment is the main responsibility of the HR department. Through the company's data, it was concluded that there is a relationship between information, teamwork, compensation, and employee engagement and commitment. Hazarika *et al.* (2019) use the example of two airlines and seek to compare them according to a simple linear regression analysis of their data. The paper makes the case that employee strength explains the positive financial results and the number of passengers carried. In conclusion, both papers use predictive models, SEM, and simple linear regression to create predictive models for decision-making. In the case of Ergle, Ludvina, and Kalvina (2017), a mixed qualitative and quantitative methodology gives robustness to the model because it starts precisely with the needs of the business and HR obtained through interview data, only to later create the predictive model. Thus, it fulfills the desideratum of performing problem-based HR analytics, as mentioned before, and not creating analyses that are not based on the real needs of aviation. These two examples can serve as inspiration in their models and methodologies for future studies on HR analytics in the field of aviation.

In none of the other twelve papers, the research problem or subject was HR analytics in aviation. Although some useful information was retrieved, namely HRM indicators and dimensions in aviation, it was considered relevant and valuable to analyze in order to create value. Two of the most important subjects in the field of aviation with strategic, tactical, and operational implications are safety and commercial areas (Brito, 2020). The first one is crucial in aviation. Without the first, there's no commercial perspective whatsoever. The imperative of a safe operation will allow commercial success. Also, in the area of people management, the literature review of the papers sought to find dimensions and measures of HR Analytics according to the model used by Sousa *et al.* (2019) for healthcare organizations. In these publications, operational issues such as weather forecasting and air traffic flow were invariably found, and in the people area, the following areas of interest were retrieved from the text by content analysis:

- Operational Staff
- Aviation crew cost
- Pilot/Crew Safety
- Crew Management
- Air Safety Crew Factors

In summary, from the literature consulted, there are three important dimensions or measures that can be analyzed in terms of HR analytics in the aviation area that have not yet been sufficiently studied: 1) cost factors related to crew; 2) air safety; 3) crew management. There are two specific areas of the aviation sector that can be studied from an HR Analytics perspective: crew resource management (CRM) (Muoz-Marron, 2018) and human factors (Brito, 2020; Kharoufah *et al.*, 2018). The first is a training program for crews focused on teamwork, communication, and the avoidance of human error. "CRM can be defined as the optimal use by crews of all available resources (information, equipment, and human resources) to achieve an efficient and safe flight operation" (Lauber, 1984, cited by Kharoufah *et al.* 2018, p. 192). The second issue related to flight safety is human factors, which are also extensively addressed in the initial training of pilots and deal with the issue of man-machine interaction. It is estimated that 70% of aviation accidents are explained by human error (Kharoufah *et al.* 2018). Hence the importance of the topic for the sector and for further research.

In addition to these indicators and areas, which may be the subject of several studies in the future in the three Analytics perspectives of descriptive, prescriptive, and predictive, other artificial intelligence approaches such as machine learning, which includes decision trees, neural networks, random forest, and SVM (support vector machine), can be used in order to present increasingly robust predictive HR analytics models.

4. Conclusions, Limitations, and Future Directions

Aviation is a people-to-people activity, so it is very important to address in management the most valuable asset of a company: its people. HR Analytics is one of the biggest trends in HRM in recent times, and the majority of the research in this field has been published in the last ten years (Margherita, 2022). HR analytics is following the most recent approach in HRM, which is to focus on the employee experience to drive more job satisfaction and create the most value for the company (Tursunbayeva *et al.* 2018). However, people and business goals cannot be divorced because they are both important pillars of sustainability. There has been recent awareness in the area of HR Analytics that data analysis and its use for decision-making have to start from the concrete problems of the business (Rasmussen, 2015) in order to have a strategic aspect that truly creates value (Gabanová, 2012).

One of the first contributions of this study is to use the example of the aviation sector to propose a new approach to HR analytics based on sectoral analysis. If HR analytics must start with the problems of the business, then the academic and industry analysis by sector is not insignificant. The aim of this study was to understand the existing academic literature on HR analytics applied to the aviation sector. A literature review was carried out, and it was concluded that there is little scientific production in this area, following the trend of the HR analytics area in general.

The limitations of this study may be the reduced number of papers analyzed (N = 23), but as it is still an incipient area, it is a number at this time.

As future avenues of investigation, more case studies are needed (Margherita, 2022) in HR in general and in the applications of HR analytics to the aviation sector and predictive models based on people management indicators and variables. By analyzing the existing literature, it was concluded that there are three areas that may be of interest in studying in the future and are another contribution of this study to research: crew resource management, human factors, and crew management, in general, as key areas of value creation that can be better managed with data analysis and the extraction of insights for decision-making. Also, more predictive models in HR analytics in the field of aviation are needed, and with the use of various artificial intelligence algorithms as machine learning, that can bring more complexity but also robustness to the studies.

References

- Almeida, F. (2017). 'Concept and dimensions of web 4.0'. *International journal of computers and technology*, 16(7).
- Ayhan, S., Pesce, J., Comitz, P., Sweet, D., Bliesner, S., and Gerberick, G. (2013, April). 'Predictive analytics with aviation big data'. In *2013 Integrated Communications, Navigation and Surveillance Conference (ICNS)* (pp. 1-13). IEEE.
- Bassi, L. (2011). 'Raging debates in HR analytics'. *People and Strategy*, 34(2), 14-18.

- Brito, A. P. (2023). 'People Analytics in the COVID-19 Pandemic: how empathy and privacy turned out the hot topics'. In M.J. Sousa, S. K. Pani, F.D. Mas, S. Sousa (Eds.), *Advancements in Artificial Intelligence in The Service Sector* (1, 9, pp.). CRC Press.
- Brito, A. P. (2022). 'Using Google Trends and Twitter to analyze the phenomenon of telework during the COVID-19 pandemic – A Social Media Analytics Review and study'. In M. J. Sousa, C. Marques (Eds.), *Innovations and Social Media Analytics in a Digital Society* (1, 5, pp. 90-111). CRC Press.
- Brito, A. P. (2020). 'O Multi-Crew Pilot License (MPL), no contexto de aumento da procura do transporte aéreo, das necessidades de safety e os novos desafios da formação de pilotos', Provas públicas para a obtenção de título de Especialista em Gestão e Administração, Instituto Politécnico de Beja/ ISCTE-IUL/ Universidade do Algarve, Portugal.
- Burmester, G., Ma, H., Steinmetz, D., and Hartmann, S. (2018). 'Big data and data analytics in aviation'. In *Advances in Aeronautical Informatics* (pp. 55-65). Springer, Cham.
- Chen, S., Huang, Y., and Huang, W. (2016, March). 'Big data analytics on aviation social media: The case of china southern airlines on sina weibo'. In *2016 IEEE Second International Conference on Big Data Computing Service and Applications (BigDataService)* (pp. 152-155). IEEE.
- Davenport, T. H. (2013). 'What do we talk about when we talk about analytics?' In: T. H. Davenport (Ed.), *Enterprise analytics – optimize performance, process and decisions through big data* (pp. 9-18). International Institute for Analytics Pearson Education, Inc.
- Deloitte Insights. (2018). *The rise of the social enterprise. 2018 Deloitte global human capital trends*, retrieved from: https://www2.deloitte.com/content/dam/insights/us/articles/HCTrends2018/2018-HCTrends_Rise-of-the-social-enterprise.pdf
- Dou, X. (2020). 'Big data and smart aviation information management system'. *Cogent Business and Management*, 7(1), 1766736.
- Ergle, D., Ludviga, I., and Kalviņa, A. (2017). 'Turning Data Into Valuable Insights: the Case Study in Aviation Sector Company'. In *CBU International Conference Proceedings...* (Vol. 5, p. 294). Central Bohemia University.
- Fitz-enz, J. (2010). 'HR Analytics: Predicting The Economic Value of Your Company's Human Capital Investments'. New York, NY: AMACON.
- Gabčianová, I. (2012). 'Human resources key performance indicators'. *Journal of competitiveness*.
- Green, D. (2020a, May). *Episode 37: How National Australia Bank Has Scaled People Analytics (Interview with Thomas Rasmussen)*. My HR Future. Insight 222. Retrieved from: <https://www.myhrfuture.com/digital-hr-leaders-podcast/2020/5/19/how-national-australia-bank-has-scaled-people-analytics>
- Gui, G., Liu, F., Sun, J., Yang, J., Zhou, Z., and Zhao, D. (2019). 'Flight delay prediction based on aviation big data and machine learning'. *IEEE Transactions on Vehicular Technology*, 69(1), 140-150.
- Hazarika, I., Albeshri, M., Cho, B., & Jumde, A. (2019). 'Role of HR Metrics in Enhancing firm performance of selected UAE Airline Companies'. *Academy of Strategic Management Journal*, 18(6), 1-8.
- Kasturi, E., Devi, S. P., Kiran, S. V., and Manivannan, S. (2016). 'Airline Route profitability analysis and Optimization using BIG DATA analyticson aviation data sets under heuristic techniques'. *Procedia Computer Science*, 87, 86-92.
- Kharoufah, H., Murray, J., Baxter, G., and Wild, G. (2018). 'A review of human factors causations in commercial air transport accidents and incidents: From to 2000–2016'. *Progress in Aerospace Sciences*, 99, 1-13.
- Kitchin, R. (2014). 'The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences'. *Thousand Oaks, CA: Sage*.
- Larsen, T. (2013, April). 'Cross-platform aviation analytics using big-data methods'. In *2013 Integrated Communications, Navigation and Surveillance Conference (ICNS)* (pp. 1-9). IEEE.
- Lu, C., Liu, H., Song, D., Yang, X., Tan, Q., Hu, X., and Kang, X. (2018, March). 'The establishment of LTO emission inventory of civil aviation airports based on big data'. In *IOP Conference Series: Earth and Environmental Science* (Vol. 128, No. 1, p. 012069). IOP Publishing.
- Mangortey, E., Gilleron, J., Dard, G., Pinon-Fischer, O. J., and Mavris, D. N. (2019). 'Development of a data fusion framework to support the analysis of aviation big data'. In *AIAA Scitech 2019 Forum* (p. 1538).
- Margherita, A. (2022). 'Human resources analytics: A systematization of research topics and directions for future research'. *Human Resource Management Review*, 32(2), 100795.
- Marler, J. H., and Boudreau, J. W. (2016). 'An evidence-based review of HR Analytics'. *The International Journal of Human Resource Management*, 28(1), 3-26.
- Muñoz-Marrón, D. (2018). 'Factores Humanos En Aviación: CRM (Crew Resource Management-Gestión De Recursos De La Tripulación) Human Factors In Aviation: CRM (Crew Resource Management)'. *Papeles del Psicólogo*, 39(3), 191-199.
- NTT Data. (2023). *The Power of Analytics in HR*. Retrieved from: <https://pt.nttdata.com/templates/download-the-power-of-analytics-in-hr>
- Rasmussen, T., and Ulrich, D. (2015). 'Learning from practice: how HR analytics avoids being a management fad'. *Organizational Dynamics*, 44(3), 236-242.
- Roy, D., Srivastava, R., Jat, M., and Karaca, M. S. (2022). 'A complete overview of analytics techniques: descriptive, predictive, and prescriptive'. *Decision intelligence analytics and the implementation of strategic business management*, 15-30.
- Singh, A., and Kaushik, A. (2015, December). 'Knowledge based retrieval scheme from big data for aviation industry'. In *2015 International Conference on Computational Intelligence and Communication Networks (CICN)* (pp. 918-923). IEEE.

- Sousa, M. J., Pesqueira, A. M., Lemos, C., Sousa, M., and Rocha, Á. (2019). 'Decision-making based on big data analytics for people management in healthcare organizations'. *Journal of medical systems*, 43(9), 1-10.
- Sullivan, J. (2013, Feb.). *How Google Became the #3 Most Valuable Firm by Using People Analytics to Reinvent HR*. *ERE Recruiting Intelligence*. Retrieved from: <https://www.ere.net/how-google-became-the-3-most-valuable-firm-by-using-people-analytics-to-reinvent-hr/>
- Tursunbayeva, A., Di Lauro, S., and Pagliari, C. (2018). 'People analytics—A scoping review of conceptual boundaries and value propositions. *International Journal of Information Management*, 43, 224-247.
- Tursunbayeva, A., Pagliari, C., Di Lauro, S., and Antonelli, G. (2021). 'The ethics of people analytics: risks, opportunities and recommendations'. *Personnel Review*.
- Yuan, Y., Yu, J., and Zhang, Y. (2020, October). 'Research on Technology Trend for Civil Aviation Safety based on Patent Big Data Analysis'. In *2020 IEEE 2nd International Conference on Civil Aviation Safety and Information Technology (ICCASIT)* (pp. 987-991). IEEE.

Theoretical Research into Leadership for Sustainability

Ioana-Alexandra Sbîrcea

University Politehnica of Bucharest, Doctoral School of Entrepreneurship, Business Engineering and Management, Department of Industrial Engineering, Bucharest, Romania

ioanaalexandrasbircea@gmail.com

Abstract: Given the social and environmental challenges facing all organizations, there is a need for new leadership models, methods, and tools for implementing organizational change for sustainable development. Thus, throughout this article, it is reviewed the current approaches to leadership for sustainability in terms of their conceptual frameworks and extant research, which all advocate a balanced stakeholder approach to leadership to address the social and environmental issues related to sustainability and sustainable development. Being drawn from spiritual and centered on leadership theories, the article offers a Global Leadership for Sustainability model that incorporates and extends the conceptual domain beyond current approaches to leadership for sustainability. Spirituality, through the qualities of self-transcendence and interconnectedness, is critical for sustainability and fundamental for Global Leadership for Sustainability. The article also emphasizes the importance of cultivating a Global Mindset for Sustainability, which incorporates two ethical principles—an ethic of remote moral responsibility and an ethic of care and compassion. As a result, global leaders for sustainability become more committed to moving beyond satisfying stakeholders' demands for economic returns, towards a more sustainable, triple-bottom line, balanced approach. Finally, we discuss implications for theory, research, and practice. Global leaders for sustainability are consequently more dedicated to adopting a triple-bottom-line, balanced approach that goes beyond meeting stakeholders' needs for financial gains. To change the paradigm of leadership and develop leaders who can cooperate to tackle difficult sustainability challenges, sustainability education is crucial. An up-to-date and broadened understanding of leadership is what 'leadership for sustainability' means, putting sustainable values into practice, leading from a paradigm of living processes, and developing an inclusive, collaborative, and reflective leadership style. To make recommendations for best practices in leadership development, this study reviews and integrates literature on leadership, leadership development, and sustainability education. The following are some recommended pedagogical strategies for developing leaders: self-observation and awareness, contemplation, inquiry into various and ecological viewpoints, experiential learning, and community engagement.

Keywords: Leadership for sustainability, Sustainability, Sustainable development, Spiritual leadership, Sustainability leadership

1. Introduction

Sustainability

Robert Scofield Earhart (2011) expressed that sustainability cannot be seen as a modern concept. Sustainability has diverse concrete homes with different shapes, like Triple Foot Line Speculations (TBLI) and Corporate Social Obligation (CSR). By relating social duty to trade, Earhart outlines that early capitalism was, as it is now included in sustainability issues, since the 'founder' of capitalism, Adam Smith, discussed the esteem of social duty. The primary production lines created cities around them for families of laborer's, with clinics, parks etc. Prior shapes of supportability can be recognized within the discourses that came up in response towards the 'laissez-faire' hypothesis of Adam Smith, as well as models which included communal living, credit unions and cooperatives (Earhart, 2011, p. 17). Based on these as of now risen activities, Earhart outlines his articulation that supportability, with the related homes, cannot be seen as modern, but maybe as a 're-emergence of ancient homes in a modern form' (Ibid.).

Sustainability instruction incorporates a noteworthy part to play in changing the administration worldview and cultivating pioneers who are competent in working collaboratively to address complex sustainability challenges. Administration for supportability signifies an unused and extended understanding of administration that implies taking activity based on sustainability values, driving from living forms worldview, and making a comprehensive, collaborative, and intelligent authority preparation. This paper analyzes and weaves together writing on authority, administration improvement, and sustainability instruction to recommend the best homes in authority improvement. An assortment of recommended educational homes that cultivate the advancement of pioneers incorporates perception and self-awareness, reflection, the investigation of biological and assorted viewpoints, and learning experientially and in the community.

2. Leadership

Pioneers perform different parts such as arranging and executing, assessing, observing, controlling, persuading, overseeing clashes, organizing, mobilizing human and monetary assets, and setting a case to the bunch. There

are several major speculations almost administration. Each hypothesis centers on a distinctive angle of human conduct and gives valuable experiences into what makes a great pioneer.

Authority is sometimes seen in headship, or in a formal position such as that of chairperson, executive, or lawmaker. An individual who needs administration aptitudes may still be designated to such a position. In due course, this individual may be supplanted by modern pioneers in case he/she does not learn to work out the capacities of authority in such a way as to fulfil the wants of the bunch or the community. Whereas government officers or enterprise staff are as a rule named 'managers', and individuals chosen from the community are labelled as 'leaders', both positions include authority and administration capacities.

Authority has been characterized as 'the preparation of impacting the exercises of a person or a bunch in endeavors towards the accomplishment of objectives in a given situation'. The source of impact may be formal, or casual. Pioneers can develop from inside a gather as well as being formally designated.

Although, the article begins with diverse sums of characteristic ability, the administration is a learned conduct. The abilities included can be procured. Pioneers are not born, they are made. Everyone may be a potential pioneer. As in any other field of try, such as cricket, medication or cultivating, common capacities can be created through ponder and practice. Numerous of today's noticeable pioneers within the provincial community started as unpracticed individuals of community.

3. Leadership for Sustainability

Authority for sustainability may be a generally modern thought that speaks to 'a drastically extended understanding of authority that incorporates a broadened base of regular pioneers in all strolls of life who take up power and lock in activities with others to create a sustainable contrast in organizations and communities' (Ferdig, 2007, p. 33). Instead of basically applying an unused focal point of authority to commerce as normal, pioneers recognize and evaluate the root causes of unsustainability, look for the social, financial, and environmental impacts of their work, and recognize and esteem the biological and social differing qualities of characteristic frameworks (Establishment for profound biology, 2012). Administration for sustainability builds on but goes past transformational authority, the overwhelming administration demonstrates instructed in higher instruction (Shriberg & MacDonald, 2013). Administration for sustainability is related to other models of authority such as the Social Alter Demonstrate of Authority (Astin & Astin, 1996) and the Social Demonstrate of Authority (Komives, Lucas, & McMahon, 1998), which highlight collaboration, comprehensiveness, and connections, common reason, and alter established in values.

The taking-after areas portray in more detail three key components that best characterize this conceptualization of administration. To begin with, administration implies developing a way of being and acting which is inserted in sustainability values. Moment authority is established in a living form worldview and third authority is a comprehensive, collaborative, and intelligent preparation. The considered unit of Leadership for Sustainability is by and by inside the master's course Environment and Climate Crisis but was the portion of a Master's in Supportability Arrangement some time recently. The research-led master's programme points to coordinating the information and abilities required to get it to show worldwide sustainability challenges, especially climate alteration, and propel worldwide alter and nearby activity. The course joins points related to worldwide natural challenges, climate approach, economic improvement objectives, cities and urbanization, feasible squander administration, societal flexibility, and the part of alter specialists and leadership—which is the setting for the Leadership for Sustainability unit. Undergraduate students are moreover required to plan a paper based on a region of their intrigued to extend their bits of knowledge into a specific field and for a few, the Leadership for Sustainability empowers them to find their energy to seek after in more detail.

Leadership for Sustainability has been advertised inside as a face-to-face learning involvement and remotely through online learning counting a module through Open College Australia. It has moreover been advertised over other Curtin graduate programs and to undergraduate students at Murdoch College so that their master's and undergrad undergraduate students in Economic advancement may appreciate what the course has to offer. The unit runs a plan over five days—two days of addresses and exchanges and two days of workshops. After a month or so of working on their imagination ventures, a last day is given to the gather displaying their major inventive commitments and reflect on and celebrating their learning involvement.

The formal points of the Leadership for Sustainability unit are to:

- Uncover undergraduate students to a run of modern authority systems.
- Encourage collaborative talk between undergraduate students and set up sustainability pioneers.

- Cultivate the abilities and instruments required to and embrace an ethic of supportability authority inside each person's one-of-a-kind circle of impact.

Different terms are utilized within the writing to depict individuals (pioneers) who are locked in sustainability authority. These incorporate supportability pioneers (e.g., Visser & Courtice, 2011), maintainable pioneers (e.g. Tideman et al., 2013), universally capable pioneers (e.g. Quinn & D'Amato, 2008), and natural pioneers (e.g. Gordon & Berry, 2006). In this article, I will utilize the term sustainability pioneers.

Sustainability leadership is, as I see it, not an isolated body of administration hypothesis, in spite of the fact that a few endeavours have been made to create 'ecological administration theories' (e.g., Wielkiewicz & Stelzner, 2010). It could be a setting in which able to utilize a run of set up hypothetical and conceptual systems to superior get it the nature of an authority challenge, define a fitting authority technique, and distinguish pertinent administration devices. For illustration, sustainability pioneers habitually work on complex challenges (moreover known as evil or versatile issues), and subsequently the hypothesis and down-to-earth instruments that have been created for 'adaptive leadership' (see Heifetz & Laurie, 1997; Northouse, 2018) are exceedingly significant to this setting.

A crucial guideline of administration is that this social wonder is intensely touchy to setting (Bryman et al., 1996; Pettigrew & Whipp, 1991). This makes a difference to clarify why there are so numerous authority speculations and conceptual systems (see Northouse, 2018). Such capacities incorporate our mentality, shapes of control, shapes of information, particular abilities, and social systems. For case, when working on complex challenges and utilizing versatile administration, pioneers ought to embrace the mentality of making secure spaces for partners to come together to superior get the nature of the issue, improve, and try with conceivable arrangements. In this setting, pioneers are likely to require aptitudes such as frameworks considering, inventive considering and help.

Clear these points by presenting undergraduate students to a run of regarded sustainability pioneers (or champions) who share their riches of encounter through intelligent talks (discussions) around their individual sustainability ventures, directing undergraduate students through the method of creating an imaginative reaction to a sustainability challenge, as well as by uncovering the undergraduate students to contemporary data on the subject.

Increasingly, Leadership for Sustainability has to be almost the linkages between the ethic of sustainability, the part of the administration, what implies to require on authority challenges - at the individual level or inside an organizational context - the part of inventiveness, the significance of reflectivity or thought and, not last, the mettle to set up something that can provide alter, now and then by building up an SME, presented in table 1.

Table 1: Conceptual frameworks and literature and their relationship tp LiS

The 5 'C' Pillars of LiS and Reference	Conceptual Frameworks and Literature	Relationship of LiS Findings to Literature
Collective Wisdom [11–19]	• <i>The Prophetic Imagination</i> (Bruegemann 2001) • Democracy and 'rhetoric' (Aristotle) • Wicked problems require collaboration (Australian Public Service Commission 2007; Snowden and Boone 2007) • Difference b/w Leadership and Management (Kotter 2008) • Personal Power for Sustainability leadership (Taylor 2010) • Leader as Host (Wheatly and Frieze 2011)	• LiS demonstrates a pedagogy for sustainability leadership that draws on understandings that collaboration, participation and a collective approach to problem solving are required for society to address the challenges we face today. • The content challenges notions of leadership as being about personality or hierarchy and instead proposes the leader as 'host' and demonstrates this approach in the pedagogy of the unit through hosting and facilitating conversations to aid learning. • Theories that propose that dialogue and conversations are essential to both effective leadership and creating societal sustainability change are taught in LiS as content and modelled as pedagogy. The method of learning through the champions that are hosted through the unit is performed through collaborative dialogue.
Conversations [19–21,37]	• Emergence happens through conversations (Wheatly and Frieze 2011) • Dialogue and Dialogic Leadership (Isaacs 1999; Scharmer 2008) • Generative Dialogue (Gunnlaugson 2006)	• The LiS course demonstrates and articulates a practical approach to adding creativity as a concept, content and pedagogy into sustainability education. • The examples provided show the creative pedagogy of LiS, encouraging students to make changes for sustainability, demonstrating the impact on their organisations, workplaces and communities.
Creativity [22–29]	• Creativity needed in Education for Sustainable Development (ESD) (Sandri 2013) • Creativity for sustainability in organisations (Lozano 2014) • Art to foster Systems Thinking competence in ESD (Molderez and Ceulemans 2018) • Creativity and Humanities needed in Sustainability Approaches (Palsson et al. 2013) • Synchronicity and Creating the future (Jaworski 1996) • Learning from failure (Brandt and Eagleman 2017)	• The value of contemplative practices can be seen through the student feedback, thus supporting literature calling for this. • Courage is demonstrated through the LiS students' creativity projects and is an essential capacity to develop for sustainability leadership
Contemplation [7,26,31–33]	• Contemplative Practices to Support Sustainability Leadership (Jaworski 1996; Scharmer 2008; Ginwright 2019)	
Courage [34,35]	• Courage to lead sustainability (Brown 2018; Rochecouste 2022)	

4. Future Leadership for Sustainability

However, inquiries about looking at frameworks considering sustainability administration in trade and organizational administration writing are still constrained, with past investigations basically intrigue in nature or inside frameworks considering disciplines, such as natural sciences and designing (Williams et al., 2017). Future research is required to look at the framework's approach to supportability administration inside commerce and organizations.

Since the framework administration system is still within the improvement organization, a plenitude of framework authority inquiries about openings exists. Maintainable frameworks inquire about is required to create modelling and decision-making strategies to enhance dynamic, versatile administration, which can require assist understanding of the suggestions of elective choices and their suitability for improving framework flexibility (Fiksel, 2006). This inquiry would be useful for framework pioneers to way better get sustainability from a systemic viewpoint and to improve supportability decision-making.

Williams and colleagues (2017) are famous for the requirement of future inquiries about how to get it social-ecological embeddedness past the boundaries of the organization, industry, and generation levels, as well as the interconnects among multi-level, implanted social-ecological frameworks. Embeddedness portrays the degree to which financial movement is repressed by non-economic education (Polanyi, 1968). This inquire may be advantageous for framework pioneers looking to impact organizational and industry boundaries. Williams et al. encourage proposed future transdisciplinary inquiry about may address whether collaborative activity progresses understanding of complex intelligence between social-ecological frameworks, and how frameworks considering can be connected in understanding how multi-stakeholder programs deliver versatile activity. Inquiring along these lines would bolster the application of framework administration in creating boundaryless, collaborative sustainability activity.

Fullan recognized eight components of framework authority inside the setting of instruction (2005). One of the components was patterned energizing, proposing that supportability is recurrent for two critical reasons: vitality, and the events when extra time and ability are fundamental to attain another versatile change. Whereas recognizing that an exact show of patterned energizing does not however exist, Fullan recommended the concept ought to be a basic component of sustainability methodology. Future investigations seem to create and ponder a demonstration of the system of recurrent energizing supporting framework administration for supportability.

Since framework leadership has been already inspected within the areas of instruction and healthcare, future inquiry is required in other areas and segments to back the generalization of past investigative discoveries and the demonstration proposed in this content. Gray (2010) recommended that social-ecological framework sustainability will be fulfilled through a person, organizational, political, and collective endeavors. Encourage inquiry on the characteristics and victory of framework authority at the person, organizational, political, and collective levels is required. Whereas framework administration has been proposed as a reasonable sustainability administration demonstrate all through this content, the advance investigation is vital to bolstering this demonstration and endorsing strategies of accomplishing, creating, and supporting framework authority. The three individual interviews conducted within the setting of this content were aiming to supply topics supporting framework administration.

Future analysts may perform subjective numerous cases considers or quantitative investigations to bolster, improve, or indeed negate a few of the hypothetical claims in this content. A citation regularly credited to American humorist and writer Check Two proposes that 'history does not rehash itself, but it rhymes'. Whereas the planet has experienced a few mass termination occasions, the current potential mass termination occasion will be the primary impact by mankind. Mankind has come to a basic intersection. The travel in this way distance has been characterized by expanded contamination and biodiversity misfortune, nature asset impediments, destitution, overpopulation, and adverse climate impacts. The long-run heading will decide the short-term and long-term reasonability of the quality of life and way of life as of now delighted in by an unbalanced fragment of the populace and wanted by future eras. Although numerous individuals recognize the got to advance to maintainable, versatile ways of life, the plausibility of such a move is debilitating, since it requires unused strategies for distinguishing and understanding complex issues (Siebert, 2018). The comprehensive selection of frameworks considering offers society a promising alternative for accomplishing critical advances towards this scary move; be that as it may, few get it frameworks considering (Siebert, 2018).

5. Conclusion

Permission for perception and mindfulness of values are a critical starting component of authority advancement. Encouraging a move to an understanding of the world as living forms is another critical viewpoint of authority improvement that can be cultivated through an investigation of biological frameworks and differing viewpoints.

Thousands of people, and communities are now working together and acting toward a more economical future. They are doing this through decentralized and non-hierarchical authority, by focusing advancement and inventiveness whereas centering on issues they care about (Hawken, 2007). Instructive teachers have a duty and a vital part in engaging pioneers to see themselves as a portion of the collective economic alter that is as of now happening. In fact, a wide assortment of authority programs for supportability exists, and the number is developing. These programs commonly center on honours such as experiential learning, building community, and centering on frameworks considering cultivating authority (Sheinberg & MacDonald, 2013).

Deliberateness academic plan can clearly cultivate openings for administration improvement, and this requires a move absent from a transmissive, keeping money show of instructions (Freire, 2000). Learning must be seen as more than substance to be picked up, and instep caught on as a transformational intelligent preparation, in which understanding is co-created, individual values are inspected, cooperation and collaboration are esteemed, and numerous points of view are empowered (Burns, 2013). Learning in this way can be an enabling handle that fortifies learners' association to put and communities and rouses the capacity to live by one's values and to collaboratively look for feasible alter. Administration improvement can and must gotten to be a need. It is more important than ever to supply transformational learning openings that enable all learners to get to be pioneers for sustainability.

Over a long time of running and advancing this master's unit, Authority in Sustainability, we have come to encounter first-hand the transformative control of:

- Collective Shrewdness from the antiquated prophets and sages to the show of astute collectivist pioneers who look for common great results.
- Discussions with individuals (champions) looking for to realize sustainability and a few of how they did it in hone.
- Inventiveness, which profoundly touches people's feelings and regularly undiscovered inventive potential, giving unused viewpoints on supportability issues.
- Consideration that empowers intelligent approaches to touch the heart and soul of the issues we discover ourselves battling to resolve.
- Strength at a point of move where we mull over the dangers of a life-changing move and make the choice to end up a alter operator.

The obligation of the logical community to bolster the change of society to economic improvement has been talked about by numerous researchers (e.g., Kates et al., 2001, Matson, 2009, Mill operator, 2013). This SV was arranged and created based upon the understanding that we require an unused sort of science with the center upon giving information for creating and executing comprehensive and precise administration for the total scope of supportability.

The foremost common definition of sustainability, beginning with the Brundtland Commission (World Commission on Environment and Advancement, 1987), finds acknowledgement among business advancement experts, organizers, and government chairmen. In any case, this definition is habitually criticized as equivocal, coming up short to distinguish the requirements or structures vital to realize sustainability (Castro, 2004). Approach modelers who don't express their sustainability viewpoint inside a built-up definition and collection of criteria produce challenges for operationalizing sustainability (Davidson & Venning, 2011). Person recognition of supportability impacts the run of issues included in the sustainability appraisal system, with a few approach designers supporting financial development for the sustainability of society and others seeing financial development as vital, but putting more noteworthy accentuation on value, social equity, and natural assets (Davidson, 2011; Davidson & Wilson, 2010). Seghezze (2009) proposed that the WCED sustainability demonstration and the triple foot line (TBL) approach may now not offer a substantial design for understanding and tending to the current natural, social, and financial challenges. Seghezze advertised a more comprehensive, plural, and viable system in which the three Ps of individuals, planet, and benefits would be substituted with put, changelessness, and people. Put portrays the physical, geographic, and socially organized spaces where people exist and are connected.

Perpetual quality, which is basically ignored within the sustainability conversation, requires more profound thought of the potential long-term impacts of human movement. People portray people from a person perspective, instead of unclear members in society, a viewpoint basically nonexistent in the current systems (Seghezzo, 2009).

Baue and Wood (2015) demanded that we ought to rise above the constrained sustainability worldview and consolidate supportability 'into a modern meta-paradigm that brings forth frameworks outlined to flourish, sustainably' (p. 279). Whereas Hothouse accurately proposed that 'sustainability is continuously more complicated than it seems' (2012, p. 38), framework authority offers a demonstration and system to get it supportability as a complicated but reasonable and noteworthy endeavor.

References

- Astin, A., & Astin, H. (1996). *A social change model of leadership development guidebook*. Los Angeles, CA: Higher Education Research Institute.
- Avolio, B. (2007). Promoting more integrative strategies for leadership theory-building. *American Psychologist* 62(1), 25-33.
- Barlow, Z., & Stone, M. K. (2011). Living systems and leadership: Cultivating conditions for institutional change. *Journal of Sustainability Education*, 2, 1-23.
- Bryman, A. (1996) Leadership in Organizations. In: Clegg, S.R., Hardy, C. and Nord, W.R., Eds., *Handbook of Organization Studies*, Sage, London, 276-292.
- Burns, H. (2011). Teaching for transformation: (Re)Designing sustainability courses based on ecological principles. *Journal of Sustainability Education*, 2, 1-15.
- Burns, H. (2013). Meaningful sustainability learning: A research study of sustainability pedagogy in two university courses. *International Journal of Teaching and Learning Higher Education*, 25(2), 166-175.
- Cannell, B. (2010). Break free from our systems prison: Implications of complex responsive process management thinking. Paper presented at UKSCK conference, Wales, UK.
- Capra, F. (2002). *The hidden connections: A science for sustainable living*. New York: Anchor.
- Capra, F. (2009). The web of life. In Northwest Earth Institute (Ed.), *Reconnecting with Earth* (pp. 26-29). Portland, OR: Northwest Earth Institute.
- Colby, A., & Sullivan, W. M. (2009). Strengthening the foundations of students' excellence, integrity, and social contribution. *Liberal Education*, 95(1), 22-29.
- Collier, P.J., & Williams, D. R. (2005). Reflection in action: The learning-doing relationship. In C. M. Cress, P. J. Collier, V. L. Reitenauer & Associates (Eds.). *Learning through serving: A student guidebook for service-learning across the disciplines* (pp. 83-97).
- Cortese, A. (2005). Learning principles for sustainability: Sustainability curriculum framework. *Second Nature: Education for Sustainability*. Retrieved from <http://www.secondnature.org>
- Cranton, P. (2002). Teaching for transformation. *New Directions for Adult and Continuing Education*, 93, 63-72.
- Cress, C. M. (2005). What is service learning? In C. M. Cress, P. J. Collier, V. L. Reitenauer & Associates (Eds.). *Learning through serving: A student guidebook for service-learning across the disciplines* (pp. 7-16). Sterling, VA: Stylus.
- Cress, C. M., Yamashita, M., Duarte, R., & Burns, H. (2010). A transnational comparison of service-learning as a tool for leadership development. *International Journal of Organizational Analysis*, 18(2), 228-244.
- Daloz Parks, S. (2005). *Leadership can be taught*. Boston MA: Harvard Business School Publishing
- Eriksen, M. (2009). Authentic leadership: Practical reflexivity, self-awareness, and self-authorship. *Journal of Management Education*, 33(6), 747-771.
- Eyler, J., & Giles, D. (1999). *Where's the learning in service-learning?* San Francisco, CA: Jossey-Bass.
- Fenwick, T. (2000). Expanding conceptions of experiential learning. *Adult Education Quarterly*, 50(4), 243-272.
- Ferdig, M.A. (2007). Sustainability leadership: Co-creating a sustainable future. *Journal of Change Management*, 7(1), 25-35.
- Freire, P. (2000). *Pedagogy of the oppressed*. New York: Continuum.
- Hawken, P. (2007). *Blessed Unrest: How the largest movement in the world came into being and why no one saw it coming*. New York, NY: Penguin Group.
- Heider, J. (1985). *The Tao of leadership: Lao Tzu's Tao Te Ching adapted for a new age*. Atlanta, GA: Humanics.
- Heifetz, R. (1994). *Leadership without easy answers*. Cambridge, MA: Harvard University Press.
- Heifetz, R., Grashow, A., & Linsky, M. (2009). *The practice of adaptive leadership*. Boston MA: Harvard Business School Publishing.
- Heifetz, R., & Laurie, D. (2001). The work of leadership. *Harvard Business Review*. Retrieved from <http://hbr.org/2001/12/the-work-of-leadership/ar/1>
- Hepburn, M.A. (1997). Service-learning in civic education: A concept with long sturdy roots. *Theory Into Practice*, 36(3), 136-142.
- Holmgren, D. (2004). *Permaculture: Principles and pathways beyond sustainability*. Hepburn, Australia: Holmgren Design Services.
- Kabat-Zinn, J. (2005). *Coming to our senses: Healing ourselves and the world through mindfulness*. New York: Hyperion.

- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Komives, S. R., Lucas N., & McMahon, T. R. (1998) *Exploring leadership: For college students who want to make a difference*. San Francisco, CA: Jossey-Bass.
- Komives, S. R., Owen, J. E., Longerbean, S. D., Mainella, F. C., & Osteen, L. (2005). Developing a leadership identity: A grounded theory. *Journal of College Student Development*, 46(6), 593-611.
- Kouzes, J., & Posner, B. (2012). *The leadership challenge* (5th edition). San Francisco: Jossey-Bass.
- Lange, E. (2009). Fostering a learning sanctuary for transformation in sustainability education. In J. Mezirow, E. W. Taylor & Associates (Eds.), *Transformative learning in practice: Insights from community, workplace, and higher education* (pp. 193-204). San Francisco: Jossey-Bass.
- Macy, J., & Young Brown, M. (1998). *Coming back to life: Practices to reconnect our lives, our world*. Gabriola Island, BC: New Society
- Mezirow, J. (2000). *Learning as transformation*. San Francisco: Jossey-Bass.
- Nolet, V. (2009). Preparing sustainability-literate teachers. *Teachers College Record*, 111(2), 409-442.
- Seghezzo, L. (2009) the five dimension of sustainability "Environmental Politics", 539-556.
- Scharmer, O. (2009). *Theory U: Leading from the future as it emerges*. San Francisco, CA: Berrett-Koehler
- Schumpeter, J. A. (1954). *History of economic analysis*. London, UK: Allen & Unwin.

Masters Research Papers

Creation of a Method for the Adoption of Digital Transformation for Medium Enterprises in the Education Business in Switzerland

Mike Krey, Jan Anderegg, Pascal Burri, Matthias Röthlin and Armando Müller

Zurich University of Applied Sciences, School of Management and Law, Winterthur, Switzerland

Mike.Krey@zhaw.ch

Abstract: The education sector, like most others, is currently experiencing a rapidly advancing digital transformation. Due to the current COVID-19 pandemic, this process is taking place faster than it would have without the virus. Currently, there are no methods that allow the affected educational institutions to quickly and efficiently implement the digital transformation. As a first step of this work, online research was conducted to determine the current state of digital transformation in the education sector in relation to the elaborated requirements. To identify differences between educational institutions of different sizes and to reach a specific analysis of the domain, the educational institutions were divided into different categories according to the number of their employees. A survey was then prepared and sent to all identified educational institutions for processing. The main goal of the survey was to reflect the current state of the educational institutions. Furthermore, the requirements as well as the efforts of the individual institutions in the area of digital transformation were of high interest. As a second step, based on the analysis of the survey, a method was created to support the educational institutions in the digital transformation, taking into account their current situation and their progress and status of digital transformation. For further research, a more detailed investigation of how the method works in practice could be conducted.

Keywords: Model, Method engineering, Digital transformation

1. Introduction

Digital transformation has gained relevance over the past few years and become a central topic in the industry. New digital technologies such as cloud computing, mobile, analytics, social media, robotics and Internet of Things pushed digital transformation even further. Digitization has an impact on all geographies, industries, and companies although the effect comes at a different time and speed for each and every company. Due to these circumstances, many industries have been facing a market shift driven by customer demand. These evolving demands force the enterprises to undertake digital transformation, start projects or, therefore, they are left behind the competition. In order to be agile and capable to respond to the market changes, the market players have to adopt a different approach and implement changed culture, processes, structures and strategies in their company.

The COVID-19 pandemic has made it obvious (e.g. home schooling) that the sector of education has been particularly affected by the disease 2019 and is often not as well positioned digitally as other business areas. The fact that the education sector is one of the largest in Switzerland and that the level of digitalisation in this area affects not only employees but also other people such as pupils and students, was another reason for this decision. In Switzerland, public authorities manage most schools. Across all levels of education, 86% of schools are public. Furthermore, around a third of private schools are subsidised (35%) (FSO 2023). In compulsory education, three-quarters of public schools and almost all private schools have fewer than 100 pupils. At upper secondary level, private institutions account for 44% of schools but only one-sixth of learners, with the majority of private schools having fewer than 100 pupils. Three-quarters of private schools and about one third of public schools offer several educational levels. 80% of private schools are located in communes with highly dense populations, compared with 57% of public schools (FSO 2023).

2. Survey

The authors chose a survey based on the size of the statistical population. The **Federal Statistical Office** Section Educational Processes in Switzerland defined the statistical population in 2018 with 369 businesses in the education sector the range of 50-249 employees. This status denotes the educational institution's type of legal and/or financial authority. Educational institutions are either public or private. Furthermore, private educational institutions are subdivided into government-dependent private and independent private institutions. An educational institution is considered to be public if it is directly under the management of a public administration (communal or cantonal authority, etc.) or is directly managed by a public body with a majority of members having been appointed by a public authority or elected by the public. An institution is considered to be private if managed by a non-governmental entity (church, trade union, company, etc.) or if its board of directors mainly consists of members that have not been appointed by a public authority. In addition, Switzerland has private educational institution that receives 50% or more of its core funding from public authorities. The last category

represents educational institution that receives less than 50% of its core funding from public authorities (FSO 2023). Due to the bigger statistical population a quantitative research approach is according to Creswell a well fitted method (Creswell 2003).

2.1 Methodology

2.1.1 Study design

The authors conducted a survey based study within the education sector (Ermakova et al. 2016). For this study a mix of open questions, in which the participants could enter their answers themselves and closed questions, in which possible answers are given, was selected. The online survey was created and executed in a web-based tool. The entire questionnaire was divided into the following parts:

- Classification questions about the company and evaluation whether the questioned company is relevant for the survey
- Classification questions on the participants knowledge
- Additional questions about the companies' digital maturity
- Main part of the survey with the core questions about the importance of the requirements for digitization and digital transformation in the organisation
- Additional questions about the effects of the coronavirus and the effects on the digital transformation
- Voluntary questions about the participant and the company

In order to cover and gather data in all different cantons, the data collection throughout Switzerland was fulfilled in German, Italian and French. This made it possible, for example, to compensate for differences between urban and rural cantons and provide a scientific research.

2.1.2 Survey structure

In the process of creating the questionnaire, the authors went through the following steps, with the last step being discussed in more detail afterwards (Small 2011):

1. Development of the superordinate questionnaire structure
2. Development and search of concrete questions
3. Selection and optimisation of questions (in team)
4. Creation of the complete questionnaire and its structure
5. Pre-test and optimisation

During step five, a pre-test questionnaire was sent to a small number of participants. Every constructed survey instrument should be subjected to such a pre-test before it is used nationwide. This was mainly to clarify the following points:

- Check the comprehensibility of the questions
- Determine difficulties of the test persons when filling out the form
- Determine the variance of the questions
- Check clarity of categories and category formation
- Technical functionality to be tested under the field condition

In order to be able to supplement the quantitative survey, a qualitative procedure is being chosen for the pre-test, in which a few people are interviewed. Therefore, feedback and remarks on the survey can be gained directly from the interviewed persons (Small 2011).

The test persons should be as similar as possible to the target group and the questionnaire should be filled out under the same conditions as the latter, large-scale test. According to the definition of a pre-test, feedback was collected from the participants.

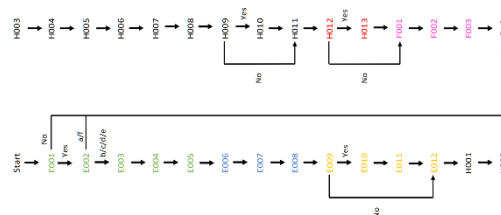


Figure 1: Survey Structure

As previously mentioned, the survey was divided into six question clusters. These clusters allow to build up a well-structured survey and thus guide the participants effectively through the survey.

The first cluster contains classification questions, which are designed to learn more about the company (marked green in Figure 1). The first two questions refer to the number of employees. If these answers indicate that the number of employees are not anywhere between 50 and 249, then the participant is taken directly to the end of the survey, as shown in Figure 1.

The second cluster again contains classification questions (marked blue in Figure 1). However, these three questions are designed to find out more about the knowledge of the participants. This enables a better assessment of the subsequent answers to the survey and, if necessary, to identify an outlier as such, should the participant have rather limited expertise in the field of digitalisation and digital transformation.

Using four questions, the third question cluster is intended to find out whether there is a person in the company who has the responsibility for implementing digitalisation and digital transformation, what role that person holds and whether it is that person who completes the survey (marked yellow in Figure 1). The fourth cluster contains the main questions with all requirements identified by the authors (marked black in Figure 1). Each requirement has to be ranked on a Likert scale according to its importance for the education sector. The answers given from this cluster provide the basis for the development of the method. Based on the results, it is then possible to find out whether and which requirements must necessarily be included in the method.

The fifth cluster of questions relates to the COVID-19 pandemic (marked red in Figure 1). Participants are asked two questions to indicate whether the pandemic has had an impact on both digitalisation and digital transformation, and if so, what this impact has been. In the last cluster of questions there are only voluntary questions (marked pink in Figure 1). If desired, personal and company details may be entered here and contact details for the results of the study may be added.

2.2 Findings

The survey generated for this research was active for three weeks and could be completed by anyone who received the link to the survey. During this time, the survey was completed and answered by 230 different people. Out of these 230 participants, 141 completed the survey, while 89 participants abandoned the survey. As can be seen in Figure 2 below, the system was unable to detect when 14 participants dropped out. A further 15 participants dropped out of the survey before the first question. After that, the number of number of respondents which abandoned the survey dropped off very sharply. Two questions are an exception. For the questions "Have you ever been involved in a digitalisation or digital transformation project within your organisation?" and "How important are the following requirements/factors for successful digitalisation or digital transformation in your organisation?", six respectively seven participants dropped out of the survey.

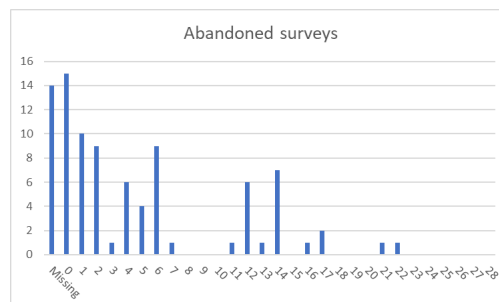


Figure 2: Abandoned surveys

The survey was prepared in three Swiss national languages and was thus also sent to all language regions. The response rate per language, in relation to all answers, can be seen in the following Figure 2 and in relation to the completed responses in Figure 3.

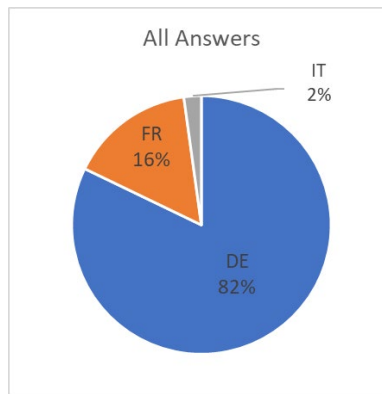


Figure 3: Percentage breakdown of languages (all responses)

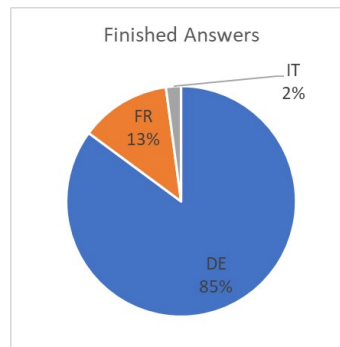


Figure 4: Percentage breakdown of languages (finished answers)

Out of the 141 participants who completed the survey, 71 were routed directly to the end of the survey by question one or two, which restricted the size of the company to more than 50 and less than 249 employees. This leaves 70 valid and complete responses, which will be considered for evaluation of the remaining questions. Out of a total of 369 companies, 19% companies participated in this survey. The questions that were intended to test the participants' background knowledge were answered by these 70 participants in such a way that no further exclusions were necessary. As can be seen in the following Figure 5, exactly 50% of all participants considered were principals. The remaining 50% held the positions of: Rector / director / head of department (20%), teacher or lecturer (13%), member of a staff unit (7%), chief information officer (2%), chief execution officer (1%) or another position (7%).

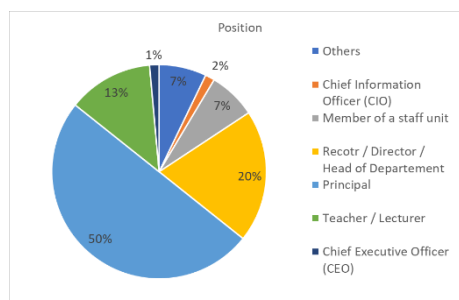


Figure 5: Position of the participants

The two education levels “primary” and “secondary” represent the main share of survey responses (see Figure 6). In contrast, the tertiary education sector and the continuing education sector are weakly represented.

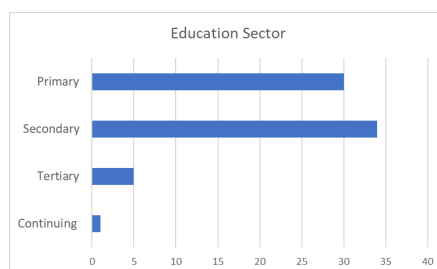


Figure 6: Number of participants based on the education sector

The distribution of privately or publicly run companies roughly corresponds to the expectations of the authors. Over 85% of the observed participants work in a public company.

The importance of digitalisation or digital transformation was rated as “rather important” or “very important” in the survey by 94.3%. Only 5.7% of the answers considered were “neither important nor unimportant”. This picture is also reflected in the question of whether there is a responsible position for digitalisation within the company. 75% answered this question with “Yes”. The responsible positions can be seen in Figure 7 below.

31 out of 52 companies which stated that there is a responsible position within the company who is in charge of digitalisation were participants in the online survey.

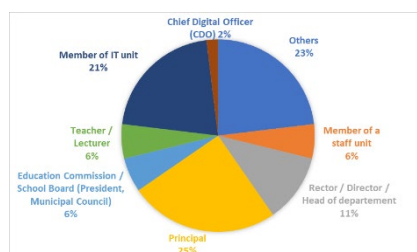


Figure 7: Percentage distribution of positions responsible for digitalisation

Within the authors’ prior research, 26 different requirements were identified as important for a successful adoption of digital transformation. During the online survey, these 26 requirements were classified by all participants in a five-level Likert scale. This scale ranges from “not important” to “very important”. In order to be able to optimally assess the importance of each individual requirement and to be able to carry out a well-founded analysis, the five-level Likert scale was transformed into a top and a bottom box. For this purpose, the three levels “not important”, “rather unimportant” and “neither important nor unimportant” were classified in the bottom box. The two upper levels “rather important” and “very important” from the top box. With 98.6% each, the most important requirements for the survey participants are “Appropriate infrastructure” and “Proper training & learning opportunities”. The following five requirements, all of which have an approval rating over 90% (see Table 1).

Table 1: Most important requirements

Requirements	Top Box
Being open to mistakes and imperfection	91,5%
Communicate the digital vision	92,9%
Flexible and adaptive employees	94,3%
Trust and security	97,1%
Being open to change	97,2%
Training and learning opportunities	98,6%
Appropriate infrastructure	98,6%

The requirement which predominantly was rated as “not as important” by the participants is “Understand the importance of Big Data”. Said requirement was placed in the bottom box by 60% of all respondents. Based on the results of the survey, it was decided that the requirements which were classified in the top box by at least

60% of the participants would be included in the method to be developed. The limit was set at 60% in order to represent the assessment of a clear majority and to be able to absorb possible deviations from certain educational levels or company sizes. This threshold excludes the following three requirements from the method:

- Understanding the importance of Big Data
- Understanding the importance of API
- Being digital

The third requirement in particular, “being digital”, was rated contrarily. At the primary education level, only 10% rated this requirement as “very important”, while in the tertiary education level 60%. However, since the tertiary education sector was not as strongly represented in the survey as the primary and secondary education sectors, this difference does not matter as much.

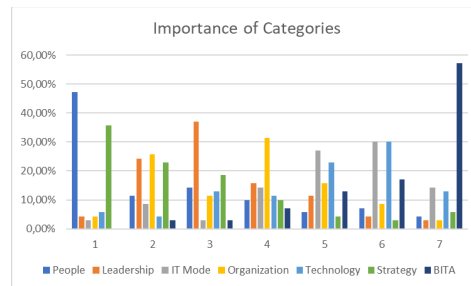


Figure 8: Importance of Categories

As can be seen from the previous Figure 8, the category “People” was rated as most important by most survey participants, while “BITA” is the least important.

The remaining 23 requirements are considered in the method development. The complete list of requirements and their categories can be found in Table 2.

Table 2: Considered requirements

Category	Nr.	Requirements
People	1	Proper training & learning opportunities
	2	Flexible & adaptive employees
	3	Technical talent and digital capabilities
	4	Planning initiatives
	5	Platform utilization capabilities
	6	Continuous assessment of competences
Leadership	7	Top-down approach (combined with bottom-up approach)
	8	Top management support
	9	Pro-actively driving the change by the executive leaders
	10	Communicating the digital vision
	11	Understanding digital processes, needs and the power of digital technologies
	12	Being open for imperfections and failures
IT Mode	13	Combination of an operational backbone and a digital services platform
Organisation	14	Trust and security
	15	Being open for changes
	16	Agile working methods

Category	Nr.	Requirements
	17	Being responsive to demand changes and need of customers
	18	Understanding the meaning of digital transformation to the organisation
Technology	19	Digital services platform
	20	Appropriate infrastructure
Strategy	21	The existence of a digital business strategy
	22	Flexible and aligned digital business strategy
BITA	23	Close collaboration between business and IT

As part of the online survey a total of 17 additional requirements were named by the participants, which they also consider important for the adoption of digital transformation. Some of these can be understood as a combination of already existing requirements. For example, the requirement to “consciously shape one's own learning at all levels and develop a culture of failure in the company” is already covered by the two requirements “Being open for imperfections and failures” and “Proper training & learning opportunities”. Other requirements, some of which were also mentioned several times, such as “money” or “time”, cannot be classified as requirements. For this reason, no further requirements were integrated into the method.

These previously mentioned terms, such as “money” or “time”, were covered by the question “What would you need to improve digitalisation or digital transformation in your company?”. The results of this question can be seen in Figure 9 below.

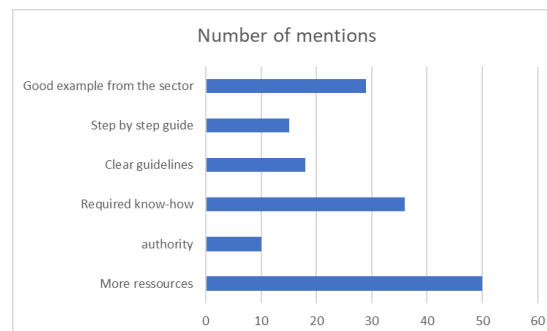


Figure 9: Necessary adjustments for a better digital transformation

Due to the COVID-19 pandemic, which was spreading at the time of the online survey, the effects of this pandemic were also included in the survey. 81.3% of the participants stated that the pandemic had an impact on digitalisation or digital transformation in their company. However, 54.3% of the participating companies only had to make minor adjustments because digitalisation was already advanced. 34.3% stated that new hardware or software had to be procured and 5.7% stated that the organisation had to make profound changes and large purchases.

3. Creation of a Method

3.1 Methodology

Lorenz (1995) defines a method as a process which is planned and systematic in terms of its means and purpose, and which leads to technical skill in resolving theoretical and practical tasks. According to Becker (2004) the aim of method-oriented research is to understand and develop methods and techniques for Information Systems (IS) analysis, design and utilization. The herein proposed method is created with practice in focus. As such, Braun et al. (2005) determined, based on a meta-analysis on method engineering, that surveys and interviews are commonly used empirical methods.

3.2 Derivation of Goals From Verified Requirements

In a first step, the authors have analysed the 23 verified requirements and determined for each requirement a goal or a combination of goals, which would fulfil the requirement. An effort was made to describe goals as measurable and as detailed as possible, however this was not possible for all requirements.

Table 3: Mapping of Requirements to Goals

Requirement Nr.	Goal
1, 2, 3, 4, 5, 6, 12, 16	Educational curriculum, yearly re-assessed and monitored for completion
2, 3, 15	Recruitment program including digital requirements which new-hires must have
7, 8, 9, 10, 11	Project budgets, guiding coalition, company-wide communication of signed off budget, townhall meetings
19, 20	Digital assets requirements Specification of operational backbone Specification of digital services platform
14	Risk Analysis, Security requirements, Security policies
17, 18, 21, 22	Digital business strategy
23	Close collaboration between Business and IT

3.3 Derivation of Techniques From Goals

The next step in the creation of a method was to derive specific techniques and activities which can be applied to achieve the described goals and bring them into an order which follows existing design principles and makes the method repeatable. First of all, it is imperative that the proposed sequence of techniques is followed, which outlined in sub-chapter D. Technique 1 “Strategy” creates the framework for the following techniques. Similarly, technique 2 “Planning” produces the budget and is used to assign digital leaders, which act as key responsables in the following techniques. During the first two techniques, the user is encouraged to assess whether the goals of techniques 3 to 7 are of importance to their digital transformation journey. For example, it might not be mission critical for a given company in the education business to have a digital recruitment program if they already have a satisfactory recruitment program in place. In such cases these techniques can be skipped.

The proposed techniques are to be applied over the course of one calendar year. This has to be taken into consideration in the first two techniques, in combination with the evaluation of which the optional techniques (3 to 7) should be applied in the current year. User companies are encouraged to lay out a five-year-plan and possibly spread the optional techniques over several years to cover each at least once. Applying a technique for the first time will require significantly more resources than consecutive applications where the activities are repeated without substantial implementation effort.

The activities have been derived from the goals by a combination of the following:

- Professional expertise of the authors (management consulting, IT project lead, business analytics)
- Abduction from unstructured literature research

3.4 Specification of Techniques

Techniques are detailed recommendations for action on how to achieve a certain goal (Kaiser et al 1999). In the following paragraphs the proposed techniques are described.

3.4.1 Strategy

Create digital business strategy which is aligned with overall strategy

As a first step we propose the creation of a digital business strategy (DBS) which is defined as an organisational strategy that highlights the business value which can be created by leveraging digital technologies. A key characteristic of a DBS is that it merges business and IS-strategies (Bharadwa et al. 2013, Grover and Kohli 2013). Companies in the educational sector need to address the following questions in order to create a meaningful DBS:

- Which of our current services can we provide digitally?

- Which of our current services can be altered by digital technologies to enhance the customer experience?
- Which internal processes (core or supporting) can we make more efficient and/or more effective by using digital technology offerings?

Derive project portfolio from digital business strategy

After the creation and sign-off of the DBS, a project portfolio can be derived (Madauss 2018):

i. Identification

Creation of an up-to-date list of components (programs and projects) to pursue.

ii. Categorisation

Categories are created based on the overall strategy and components are assigned to the suitable categories.

iii. Evaluation

All pertinent information related to components are gathered so that an evaluation can be performed. The information can be qualitative or quantitative and the collection of information must be repeated until an adequate level of accuracy is reached.

iv. Selection

Based on the previous evaluation, the produced graphs, charts, documents and recommendations are inspected to perform a selection of components that the organisation should pursue, based on the organisations resource capacities.

v. Prioritisation

Components are ranked within each of the following elements: Category, investment time frame, risk versus return profile and organisational focus.

vi. Portfolio Balancing

Based on the previously produced rankings the organisation should come up with a portfolio component mix with the greatest potential to achieve the DBS without putting the organisation at a higher risk than the organisation's risk appetite allows.

vii. Authorisation

The project portfolio is communicated to management for sign-off.

3.4.2 Planning

Appoint project managers and form guiding coalition (Business + IT)

Madauss defines the task and responsibilities of a project manager as follows: "Achievement of the previously specified project goal within the given budget and time frame" (translated from German) (Madauss 2018). As previously identified, for digital transformation-related projects it is imperative that both business and IT are aligned, therefore ideally the project manager already has an interdisciplinary role in both areas. Alternatively, projects can be co-managed by a combination of a business representative and an IT representative. In the end, the project managers need to act as a powerful guiding coalition within the company (Sebastian et al. 2017).

Analysis of required budget for digital initiatives

Project managers need to consult various sources in order to prepare a sound estimate of the required resources for the digital transformation projects. In the context of the education business we suggest to not shy away from consulting with external consulting experts which have experience with transformational efforts in the education sector – however we suggest to draw the line in terms of the scope of work at the design level and project support.

3.4.3 Communication

Top-management signs off on budget

After the budgets have been discussed with the principal and final adjustments have been made, the budget shall be signed off. At this step it is important to clearly communicate not only the project goals but also the overarching vision and strategies which these projects aim to implement to the whole company staff. At minimum this communication should happen via a formal conference meeting with Business and IT attending.

Guiding coalition and top-management present their initiatives

A series of conference meetings shall be held, in which the respective project managers present their project in terms of goals, activities and key contacts. Top-management shall be present to underline their support of these projects and again highlight the transformational vision.

Guiding coalition has weekly touchpoints with Business and IT for updates and requests

In order to foster alignment between Business and IT, it is crucial that a platform is offered where the two divisions can openly discuss project updates, additional requests and any other business. These meetings should be held by the guiding coalition which manages the projects and is therefore responsible for healthy communication channels.

3.4.4 Recruiting

Analysis of recruitment requirements in regards to digital

Based on the project portfolio an analysis shall be carried out in order to determine which digital capabilities the current staff is lacking.

Create recruitment program which stipulates the percentage of new-hires which must meet digital requirements

The previously identified recruitment requirements shall be taken into consideration when creating the digital recruitment program. Digital capabilities should be considered in recruitment efforts and certain measurable goals should be set up to track effectiveness of this program.

Re-assess recruitment requirements yearly

The authors previous studies have shown that such requirements need to be re-assessed regularly as these might change due to the ever-changing nature of digital trends and needs.

3.4.5 Training

Analysis of educational requirements in regards to digital

Based on the project portfolio an analysis shall be carried out in order to determine which digital capabilities the project teams on one hand and the whole company staff on the other hand must have.

Re-assess educational requirements yearly

The authors previous studies have shown that such requirements need to be re-assessed regularly as these might change due to the ever-changing nature of digital trends and needs.

Identification of training offerings which match the educational requirements

Training offerings can range from online tutorials and online classes to technology boot camps and live classes (internal or external).

Monitor training completion yearly

To ensure that employees are being trained on digital skills effectively, training monitoring is imperative.

3.4.6 Digital assets planning

Identification of requirements which digital assets need to have for digital services according to strategy

In step 1.1 the digital business strategy has been created which includes a definition of the digital services to pursue. In the current step the company needs to define which characteristics the digital assets need to have so that those digital services can be brought to market. The authors encourage to decide at this point whether the IT systems through which the digital services will be provided should be maintained in-house or maintained by a service provider.

Specify operational backbone

Depending on the kind of digital services, an operational backbone may be required which ensures the efficiency, scalability, reliability, quality and predictability of core operations (Sebastian et al. 2017). A specification document shall be created which defines the characteristics of the operational backbone as an input to the respective project which implements the digital asset or upgrades the existing digital asset respectively.

Specify digital services platform

Based on the authors research, having a platform on which digital services can be provided is a key requirement for a successful digital transformation. This platform can have a broad definition; however, it should be defined to fit the digital services which the company has set out to provide.

3.4.7 Security planning

Analysis of threats and current weaknesses

At this stage the digital assets are defined, hence threats and weaknesses of these digital assets need to be evaluated. For most commercially available platforms such information can be easily retrieved through a web query. For self-developed solutions we recommend to consult the initial developers to support on this evaluation.

Identification of security requirements

Based on the previously identified threats and vulnerabilities the security requirements can be deduced, such as:

- implementation and maintenance of a firewall protecting the web server
- implementation and maintenance of an Intrusion Detection System on the web server
- Password requirements need to follow best-practices

Creation of security policies

Policies need to be defined which make sure that security requirements are implemented and upheld. These policies should be aligned with the overall digital business strategy; hence they should secure the owned platforms to a degree where customer's trust and safety is ensured. In the case that platforms are hosted on infrastructure owned by a service provider, management needs to take action to gain comfort over security policies implemented at the service provider as well.

Table 4: Techniques, activities and goals for the adoption of digital transformation for medium enterprises in the education business in Switzerland

Technique	Activities	Results / Goal
1. Strategy	Create digital business strategy which is aligned with overall strategy	Digital business strategy
	Derive project portfolio from digital business strategy	Project Portfolio
2. Planning	Appoint project managers and form guiding coalition (Business + IT)	Guiding Coalition
	Analysis of required budget for digital initiatives	Project Budgets
3. Communication	Top-management signs off on budget	Company-wide communication of signed off budget
	Guiding coalition and top-management present their initiatives	Townhall meetings
	Guiding coalition has weekly touchpoints with Business and IT for updates and requests	Close collaboration between Business and IT
4. Recruiting	Analysis of recruitment requirements in regards to digital	Recruitment program including digital requirements
	Create recruitment program which stipulates the percentage of new-hires which must meet digital requirements	
	Re-assess recruitment requirements yearly	
5. Training	Analysis of educational requirements in regards to digital	Educational curriculum, yearly re-assessed and monitored for completion
	Re-assess educational requirements yearly	
	Identification of training offerings which match the educational requirements	

Technique	Activities	Results / Goal
	Monitor training completion yearly	
6. Digital assets planning	Identification of requirements which digital assets need to have for digital services according to strategy	Digital assets requirements
	Specify operational backbone	Specification of operational backbone
	Specify digital services platform	Specification of digital services platform
7. Security planning	Analysis of threats and current weaknesses	Risk analysis
	Identification of security requirements	Security requirements
	Creation of security policies	Security policies

4. Conclusions

This paper shows which requirements are relevant for adoption of digital transformation in the education sector. The focus was set on companies between 50-249 employees in Switzerland and provides a method to adopt digital transformation for such institutions. In a first step of the requirements, which are relevant for a successful adoption of digital transformation, were evaluated with an online survey as a quantitative research approach. The statistical population of the survey was defined as 369 companies in Switzerland and 70 valid respondents could be gathered.

As results of the quantitative research, three out of twenty-six identified requirements were eliminated due to the online survey but no new requirements were found. 23 out of 26 existing requirements were declared as important from at least 60% of the respondents and could be confirmed. Another finding is that COVID-19 had an impact on digitalisation or digital transformation. 81.3% of the questioned companies had to adjust in their planning.

The verified requirements were taken as a basis and transformed into reachable goals. As a result, the main techniques and activities to adopt digital transformation are combined in a method. Medium enterprises in the education sector can consult this method and apply it as a guideline on their digital transformation journey. The method shows the educational sector the relevant steps to adopt digital transformation and fills a research gap that was identified in a prior study.

For further research the created method could be tested in the field to gather additional information. With the supplementary information or identified gaps the method could be adjusted and would allow to improve the created method. Furthermore, it would be interesting to validate this method in different sizes of enterprises or in other sectors besides the educational sector in Switzerland. It would also be interesting to apply this method outside of Switzerland or Europe altogether to study how culture differences influence the outcome of the digital transformation journey.

Acknowledgements

The authors would like to thank all the participants of the survey and reviewers.

References

- Becker, J. (2004) Epistemologische Positionierungen in der Wirtschaftsinformatik am Beispiel einer konsensorientierten Informationsmodellierung, in *Wissenschaftstheorie in Ökonomie und Wirtschaftsinformatik: Theoriebildung und -bewertung, Ontologien, Wissensmanagement*, Wiesbaden: Deutscher Universitätsverlag, pp. 335–336.
- Bharadwa, A., El Sawy, O. A., Pavlou, P. A., and Venkatraman, N. (2013) Digital business strategy: toward a next generation of insights, *MIS Q.*, vol. 37, no. 2, pp. 471–482.
- Braun, C. Wortmann, F., Hafner, F. and Winter, R. (2005) Method construction - a core approach to organizational engineering, in *Proceedings of the 2005 ACM symposium on Applied computing*, New York, NY, USA, pp. 1295–1299.
- Ermakova, T. and Fabian, B. (2016) Improving Individual Acceptance of Health Clouds through Confidentiality Assurance, *Appl. Clin. Inform.*, vol. 07, no. 04, pp. 983–993.

- FSO (2023) School status, Federal Statistical Office Section Educational Processes
<https://www.bfs.admin.ch/bfs/en/home/statistics/education-science/educational-institutions/school-status.html>
- Grover, V. and Kohli, R. (2013) Revealing your hand: Caveats in implementing digital business strategy, *MIS Q.*, vol. 37, pp. 655–662.
- Kaiser, T, Bach, V., Vogler, P. and Oesterle, H. (1999) Eine Methode für die Konzeption von Intranets., *HMD - Prax. Wirtsch.*, vol. 209, pp. 94–104.
- Lorenz, K. (1995) Methode in *Enzyklopädie Philosophie und Wissenschaftstheorie*, Vol. 2, pp. 876–879.
- Madauss, B.-J. (2018) *Projektmanagement: Theorie und Praxis Aus Einer Hand*. Berlin, Heidelberg: Springer Berlin / Heidelberg.
- Sebastian, I., Ross, J., Beath, C., Mocker, M., Moloney, K. and Fonstad, N. (2017) How big old companies navigate digital transformation.
- Small M. L. (2011) How to Conduct a Mixed Methods Study: Recent Trends in a Rapidly Growing Literature, *Annu. Rev. Sociol.*, vol. 37, no. 1, pp. 57–86.

Digital Health Challenges in Social Entrepreneurship: Insights and Best Practices

Leonardo Melo¹ and Teresa Dieguez^{1,2}

¹Polytechnic Institute of Cávado and Ave, Portugal

²Universidade Aberta, Portugal

tdieguez@ipca.pt

Abstract: Ensuring dignified care for needy populations worldwide is a collective responsibility that transcends geographical and environmental conditions. Modern entrepreneurs and businesses should incorporate social responsibility into their core objectives and success plans, recognizing the influence of underprivileged communities on their operations. However, not all organizations possess the internal capacity to actively practice social responsibility due to factors such as business type or staff profile. Consequently, many companies support other institutions dedicated to social causes, viewing it as a business opportunity that can yield modest profits. This article presents a case study of Diagnext.com, a small company that has devoted 14 years to technological innovation in digital health and has made significant contributions to public healthcare. Their initiatives have had a remarkable impact on the Amazon Rainforest's remote populations, including indigenous communities and river dwellers, facilitating hundreds of thousands of medical consultations annually. The case study aims to understand the main factors that drove Diagnext.com's promoters to invest their knowledge in social innovation and how they are proactively building their future. Key aspects explored include the leadership profile of Diagnext.com, ethical and sustainability concerns, transparency, and social responsibility. By analyzing these factors, the article highlights the importance of integrating social responsibility into business practices and the positive outcomes that can be achieved through technological innovation in addressing the healthcare needs of underprivileged populations.

Keywords: Social responsibility, Social entrepreneurship, Digital health, Technological innovation, Ethical concerns, Leadership profile, Sustainability, Diagnext.com

1. Introduction

Providing dignified care to needy populations around the world is a commitment that must be assumed by all of society, regardless of where and in what conditions they are (Baehr, 2016; Freeman, 2022; Fukuyama, 2018; Tomuschat, 2014). It is crucial that modern businessmen and entrepreneurs include social responsibility in their businesses (Kickul & Lyons, 2020; Satalkina & Steiner, 2020) because they are also influenced by a representative part of the population in need of everything or almost everything (Martins et al., 2023).

However, not all public or private organizations have the conditions in their business to practice social responsibility. Although this practice is noble, some companies do not have the necessary internal capabilities due to the type of business they have or their staff profile. Many of them become sponsors of other institutions that have this vision as their central goal (Cajaiba-Santana, 2014). This can be translated as a business opportunity, which can be contextualized as a modest profit factor. This is what is called social entrepreneurship, which may or may not be involved with technological innovation (Gupta et al., 2020; Witkamp et al., 2011). With the ability to adapt to any industry, social responsibility encompasses the application of "digital health" to provide attention, relief, and medical care to those in need, regardless of their circumstances, including unconventional situations (Ibrahim et al., 2021).

The present study aims to understand the main factors that drove a small company, born in Brazil, to invest its knowledge in social innovation, ensuring that no one is left behind in the digital era regarding digital health. After conducting a literature review, a case study of Diagnext.com is presented. The study discusses the results, outlines the future of the company, and concludes with key findings.

2. Literature Review

Ensuring dignified care for global populations is a collective duty, irrespective of geographic or environmental challenges. Businesses, as key stakeholders, should embed social responsibility in their core objectives. However, constraints like business type or staff profile hinder some organizations. Many opt to support social causes, viewing it as an opportunity for both altruism and modest profits. Addressing corporate social responsibility requires attention to ethical obligations (Beji et al., 2021), stakeholder engagement (Calabrese et al., 2019; Waldman et al., 2019), sustainable practices (Sabokro et al., 2021), community development (Caiado et al., 2018; Gunawan et al., 2020), and transparency (Caputo et al., 2021). Implementation challenges include resource limitations, conflicting priorities, and the need to balance profitability with social impact. Overcoming these demands strategic planning, leadership commitment, and stakeholder collaboration (Stahl et al., 2020).

A sustainable business model hinges on a comprehensive integration of innovation, social responsibility, and eco-friendly practices. This approach not only addresses societal challenges but also cultivates economic prosperity (Ibrahim et al., 2021). However, the integration of social causes and modest profits can also be a choice in social entrepreneurship through employing market-oriented strategies to achieve social impact (De Lima, 2023). By leveraging their entrepreneurial activities, social entrepreneurs seek to address societal challenges and promote positive social change. One approach to achieve this is through sponsorship of institutions dedicated to social causes, which presents business opportunities aligned with the organization's mission and values (Barnett et al., 2020). This alignment allows companies to simultaneously seek financial sustainability and social impact, reinforcing their commitment to social responsibility.

Innovations enable the development of sustainable practices and solutions (Sivam et al., 2019). Technological innovation, particularly in digital health, focuses on providing necessary care to underserved populations. This encompasses advanced diagnostics and medical consultations. The evolving landscape includes telemedicine, protocol-driven care, and enhanced access to healthcare resources. However, challenges related to data privacy, control, and ethical boundaries persist (Mitchell & Kan, 2019). Entrepreneurs face a demanding workload, resource limitations, high uncertainty, and the need for creativity and innovation (Nikolaev et al., 2020; Stephan et al., 2023).

This journey may initially be isolating, lacking the support typically available to traditional employees. Nevertheless, it provides the freedom to cultivate meaningful relationships. Entrepreneurs bear significant emotional and financial investment and may even be personally liable for their ventures (Jenkins et al., 2014). Entrepreneurs with a high-risk tolerance often report greater satisfaction and reduced stress levels (Carree & Verheul, 2012). Personal values, such as valuing freedom and seeking challenges, are strong predictors of entrepreneurship (Nikolaev et al., 2020).

3. Diagnext.com: A Case Study

3.1 Research Design

The case study is based on a combination of primary and secondary research, including interviews, data analysis, and a review of relevant literature and documentation related to Diagnext.com and its initiatives. The research design for this case study is qualitative in nature, aiming to gain an in-depth understanding of Diagnext.com and its initiatives in public healthcare. Qualitative research focuses on exploring complex phenomena and understanding the underlying meanings and motivations behind them (Ormston et al., 2014; Qu & Dumay, 2011). It allows for the collection and analysis of rich, detailed data to provide a comprehensive view of the case (Moser & Korstjens, 2018).

3.2 Diagnext.com

3.2.1 Framework

The effort to extend healthcare to the farthest frontiers, facilitated by cutting-edge technology, emerged in the 20th century through the integration of innovative processes. Indeed, technological advances throughout history have aimed to overcome barriers and challenges in various domains, including healthcare. From the early use of landline telephones to assess heart rhythm to futuristic video conferencing systems that transmit videos of patients to healthcare professionals, to state-of-the-art CT and MRI systems, the aspiration to overcome obstacles such as distance, contagious diseases and crises resulting from wars and disasters has always been a driving force. These aspirations were fuelled by the technological capabilities available at the time, continually pushing the limits of what was considered possible.

During the Christmas celebration of 2001, two brothers and the visionary sister-in-law of one of them, including a radiologist, a telecommunications engineer with extensive computer knowledge and an innovative nutritionist, devised a company project focused on improving public health through the intensive use of digital technologies. Although telemedicine was already widespread, it was predominantly applicable only where it was not truly needed. However, if the goal was to respond to the population's demand where there is no human or technical structure, it would be pointless to study solutions where they are abundant. Motivated by this vision, the engineer began designing and developing systems, processes, technical structures, and ultimately, codes, as a hobby. These endeavours aimed to enable the digital transmission of data through the limited means of communication and processing available in resource-constrained regions. The team collectively engaged in international consultancies, gaining expertise in operating systems for large computational volumes,

information technology management, advanced statistics, and project management. This expertise contributed to the development of a sophisticated model that successfully facilitated digital health processes.

Also from the outset, the team sought that the environment studied had the potential to have a significant impact on medical care in the face of substantial patient volumes and technical implementation challenges. In this sense, the environment was built based on: i) free software, innovative processes and remote operation formats; ii) best practices, inspired by the rigorous, standardised and technically oriented approach observed in the renowned Brazilian financial sector and iii) vision of integration with existing medical technologies, aiming to motivate professionals to adopt the technologies developed by the team based solely on their exceptional effectiveness, rather than their explicit visibility.

In 2009, following benchmarking at a university hospital, comparing the technologies used in daily healthcare practice with those implemented in the laboratory, the team found a 25-fold increase in efficiency, as well as greater resilience and a 60% reduction in operating costs. Encouraged by these remarkable results, the team decided to create Diagnext.com, with the intention of exploiting their research and presenting a new approach to working in hospitals with significant patient volumes and operational complexities.

Diagnext.com was formally constituted and quickly became an example of social entrepreneurship, even before the expression was used for this type of company. Its strategic objectives are presented through its “Vision, Mission and Values” declarations, namely:

- Vision: Take health to new frontiers and to those who need it, wherever they are.
- Mission: Make technological dreams in environments hostile to information technology come true.
- Values: i) Transparency: Be clear and transparent in your actions; ii) Sustainability: Develop techniques and processes that do not impact the environment where they are used; iii) Creativity: Maintain an innovative profile in all its operations. When in doubt, look at the new one; iv) Innovation: Focus, objective, and way of thinking of the institution; v) Ethics: Be completely ethical in your decisions, maintaining and influencing the market that surrounds you; vi) Social Responsibility: To be an institution that takes responsibility for its public, providing the best services and exceeding expectations.

3.2.2 Projects and awards

Since the beginning, the team made a deliberate decision to seek projects and clients in unconventional areas where few were willing to work. They embraced technical difficulties as constant challenges to their operations. One of the greatest and ongoing challenges has been the reluctance of healthcare professionals to recognize that technology can solve their problems through subtle or imperceptible modifications to established technical processes. At least in Latin America, there is great resistance to demonstrating that regional technology can provide great advantages to traditional processes.

In the early stages, the team embarked on major projects in the Brazilian states of Rio Grande do Sul and Mato Grosso do Sul, where the local telecommunications infrastructure was insufficient to support the demand. Existing convergent radio link structures were woefully inadequate for transmitting medical data from 21 hospitals. The challenges were immense, and the team set a significant milestone: to develop a system that utilized distributed processing techniques between local equipment and a more favourable technical environment—a data centre. The goal was to compress medical data without any loss and stabilize communication traffic. This milestone was achieved in 2010, resulting in a system that was approximately 65% more compact and 25 times faster than traditional methods. Other projects of various sizes emerged, focusing on integrating clinics with high patient volumes in regions plagued by violence in the state of Rio de Janeiro. The key milestones in these projects involved navigating complex operations due to the large number of people involved, employing low-cost equipment, adapting to unstable and precarious communication environments, implementing remote operations, and streamlining installation processes that differed greatly from conventional industry practices.

Leveraging their knowledge of the technology industry at the time, the team utilized recently commercialized Intel equipment featuring low-cost atom processors that offered sufficient processing power for their needs. This allowed them to overcome economic constraints while maintaining the required performance. Another innovative approach involved developing communication systems capable of handling media contingency, a concept commonly applied in conventional information technology but entirely novel in the healthcare segment at that time.

Meanwhile, during the 5th Brazilian Congress of Telemedicine and Telehealth, the company received an invitation from the Health Department of the State of Amazonas to explore technologies and test their models in that region. The goal was to establish an integrated telemedicine system capable of addressing the various challenges previously encountered.

Consequently, in 2011, an initial test was conducted for transmitting medical data from the interior of the state, particularly from the city of Itaocatiara, using an unstable and low-speed satellite connection. The results were promising, including:

- Transmission of 30 exams in less than 5 minutes: the traditional industry of the segment took more than 2 hours to transmit just one.
- The simplicity of installation: two computers of low cost, size and structure - commercially called thinclient - were used to carry out the entire technical operation.
- The local implantation was all carried out at a distance, through remote technicians, and the equipment was sent ready for use by the post office.

The results were thoroughly analyzed by both political and technical stakeholders, and they received full approval for successfully meeting the objectives of the project being developed: Telemedicine and telediagnosis in the remote areas of the State of Amazonas.

The achieved results, as requested by the State Government on a monthly basis, are outlined in Table 1, providing a comprehensive overview.

Table 1: Results obtained in the project until 2016 (own elaboration)

Goal	Reason	Results obtained
Time	Perform exam transmissions from environments as quickly as possible.	4.5 minutes
Compression	In clinical environments, it is essential to reduce information processing and how much it spends to store information	97%
Number of exams	Maximum and average volume of exams transmitted	The maximum overall volume of 9,000 exams/month, reaching an overall average of 7,077

The project garnered recognition and acclaim both within Brazil and on an international scale, receiving prestigious awards including HIMSS Latinamerica, being named among the "100 Most Innovative in Health," receiving the Transformational award from the Brazilian Association of the Health Technology Industry, and being recognized for Innovation by the Brazilian Association of the Medical Devices Industry. Furthermore, the project has been invited to present its outstanding results and methodologies at numerous conferences, including HIMSS Connected Health, IEEE Healthcom, WHO Healthcare Global Meeting, among others.

3.2.3 Technological transfer to other activity sectors

The company was established with a strong focus on research and development, originating from diverse backgrounds. It has consistently emphasized innovation through processes that create a significant impact on the value chain, with a particular emphasis on the healthcare sector. However, as time passed, it became evident that the solutions they offered addressed needs beyond the healthcare domain. The technological challenges and requirements they aimed to resolve were present in various other sectors as well. Other industries began adopting their perspective and applying it to healthcare because no alternative or superior answers were available. These solutions originated from information technology in similar environments and were subsequently adapted for the healthcare market. Over time, it became apparent that there were gaps in meeting the operational demands that involved the transmission, storage, and processing of large volumes of data under critical, stringent, and sometimes resource-constrained conditions.

The patents developed by the company aimed to address two crucial challenges in the field of information technology, namely communication and archiving. In what concerns communication, these patents introduced valuable tools designed for environments facing significant obstacles in transmitting large volumes of data quickly and efficiently. They particularly catered to those on the fringes of developed society, where the existing communication channels exhibited imbalances between the volume of data to be transmitted and the quality

of the channel. These tools facilitated communication through satellites in challenging environments, optimized integration of diverse communication platforms, and mobile telephony in high-traffic areas, among other applications. In laboratory testing, the proposed communication techniques, management systems, and integration methods demonstrated up to 240 times greater efficiency compared to conventional approaches in critical environments. In what concerns archiving, the company also developed tools for specialized data compression. Initially, the focus was on compressing data before transmission. However, in 2017, this became a specialized service offered by the company, expanding beyond medical data. It encompassed video and audio files, digital documents, and other data formats, resulting in a drastic reduction in digital size (97% for digital images, 83% for video and audio, 65% for transcribed digital documents, etc.). These compression techniques provided significant benefits in terms of storage efficiency and data management.

Both areas of research offer technological advancements that extend beyond the realm of digital health, finding applications in various industries such as entertainment, education, museums, security, and public administration. The company was established on the foundation of its research and development division, stemming from diverse backgrounds. As a common *forum*, its primary focus has always been on innovative processes that create a tangible impact in the value chain, with a particular emphasis on enhancing the healthcare sector.

3.2.4 Scenarios for a sustainable future

Recognizing the rich history of Diagnext.com, its partners have come to understand that the company's most valuable strength lies in its ability to strategically plan and consistently deliver state-of-the-art innovations, irrespective of the industry or field it operates. As a result, several projects have been conceptualized recently, with the foresight that they hold great potential for the company's future. Some of these projects are shown in Table 2 and represent internal studies and proposals that have yet to be fully explored but exemplify the forward-thinking mindset of the company.

Table 2: Validated scenarios with proven experience (own elaboration)

Item	Name	Description	Potential locations
1	Expand activities in digital health and provide a framework capable of taking startup companies and new technologies to new frontiers	Integrate innovative tools from startups that needed infrastructure, knowledge, know-how, etc. in environments hostile to information technology. The intention is to make the constituted communication platform useful for other forthcoming technologies	Europe, Latin America, Africa, Middle East, Asia, etc
2	Experience in managing and operating complex company projects	Build in hostile environments essential services to local customers, such as integral schools and mobile telecommunications operators in dense forest environments, such as the one existing in the Amazon Forest and in the Brazilian semi-arid region	Latin America, Africa, US countryside, etc
3	Compression of databases and digital documents	Use information technology and artificial intelligence tools to compress large databases and collections to reduce your operating costs. The utility is great in reducing general costs of technological infrastructure (processing, communication and storage)	Public and private health, public administration, museums, useful data from the oil and gas segment, etc
4	Communication and operational management for critical environments	The techniques used, methods, processes and algorithms, can be used in environments with a high level of operational complexity, where the adversities of the environment make integration and communication impossible	Critical operation and control market, such as those found in the oil and gas, agribusiness, public safety, etc

4. Discussion of Results

The collected data presents several key factors that positively contribute to a successful and innovative company named Diagnext.com. Its mission is to make technological dreams in information technology-hostile environments come true. From its early stages, the company sought projects and clients in unconventional areas where few were willing to work. It embraced technical difficulties as constant challenges and developed solutions that addressed specific needs in resource-constrained regions. Its promoters have different backgrounds and utilize their expertise in operating systems, information technology management, advanced statistics, and project management to create efficient, cost-effective solutions and capable of operating in challenging environments.

By aiming to motivate professionals to adopt their technologies based on exceptional effectiveness rather than explicit visibility, they fostered the integration of their systems into established healthcare practices. This approach allowed for the seamless incorporation of their solutions, avoiding disruption or resistance from healthcare professionals. Also, by collecting and analyzing large volumes of healthcare data, the company gains insights that help optimize its solutions and enhance patient care, while continuously improving its algorithms, refining its diagnostic accuracy, and providing evidence-based recommendations. A culture of continuous learning and improvement is promoted, as it seems that the company actively seeks feedback from users, healthcare professionals, and stakeholders to identify areas for enhancement. Partnerships and Collaborations with other organizations, both within and outside the healthcare sector, enable Diagnext.com to expand its reach, access new markets, and accelerate the development and deployment of innovative healthcare solutions. The company has a work profile whose objective is to address serious health technology issues under critical and/or hostile conditions, developing patentable and sustainable technologies that really make a difference in medical care.

However, while its charitable mission holds significant social importance, it also needs to be financially sustainable. It is imperative to establish a strong presence in the market for its services to truly impact medical care in these unfortunately common environments. This entails establishing connections with partners or clients who recognize the value in terms of both financial returns and an enhanced reputation that it can offer and conducting a thorough assessment of the financial benefits that these strengths provide.

Several potential avenues have been identified to enhance the current model, including:

- Utilizing technologies developed in other markets that can be adapted. For instance, an advanced data compression system could be employed by governments to efficiently store data generated in interactions with their citizens, such as documents, contracts, reports, blueprints, etc. Document storage companies could benefit from these technologies to save technical and financial resources in digitally archiving documents. Additionally, the communication environments utilized by the company could prove highly valuable in public security sectors for monitoring high-risk areas and environments hazardous to human presence, particularly in the oil and gas industry.
- Collaborating with prominent brands with the aim of becoming a 'White Label' company, integrating their technologies with others that align with their expertise.
- Expanding the technical development model to other markets with similar needs, positioning themselves as a testing ground.
- Exploring potential partnerships with regional or local investors who share a degree of integration with the business model and objectives.
- Pursuing partnerships that bring additional benefits to the technology employed.

5. Conclusion

This study seeks to explore the key factors that have propelled a small Brazilian company to invest its expertise in social innovation, ensuring inclusivity in the digital era, particularly in the realm of digital health. In today's business landscape, innovative practices facilitate the development of sustainable solutions, while companies must also embrace their social responsibilities to promote societal well-being and environmental preservation. However, social entrepreneurship can present challenges, especially for organizations with limited resources or incompatible profiles. To gain a competitive advantage, collaboration and cooperation with relevant stakeholders, adaptability to changing circumstances, scalable and sustainable solution design, long-term ethical considerations, transparency, and social responsibility emerge as crucial factors. Nonetheless, Diagnext.com sets itself apart through its unique assets, team characteristics, and profile.

Diagnext.com prides itself on its diverse team of highly skilled professionals with extensive experience, all united by a vision to advance public health through the widespread adoption of digital technologies and always in continuous learning. Guided by values such as transparency, creativity, ethics, and social responsibility, the team demonstrates proactivity and an unwavering commitment to delivering exceptional services that consistently exceed expectations. The company's dedication to social impact and responsible business practices sets it apart as an innovative and socially conscious organization. The founders are dedicated to driving innovation and staying attuned to market trends, leveraging their expertise to assist sectors in need. They also prioritize the well-being of society, particularly in remote regions where establishing necessary physical infrastructure poses challenges. They recognize that not all regional problems can be solved with conventional tools available on the market, and thus, companies invested in technology development could draw inspiration from their adaptable approach.

Furthermore, the founders acknowledge that what may be considered definitive technology in one place may not always be easily implementable in other parts of the world due to varying factors like physical characteristics, population dynamics, and local profiles. Their approach is to develop solutions tailored to the specific environment rather than attempting to force technology where it may not be feasible. This approach, they believe, ensures optimal efficiency, preventing the end customer from receiving subpar or inadequate services.

This study aims to contribute to the promotion of best practices in social entrepreneurship. For future research endeavors, it is recommended to conduct interviews with the founders of Diagnext.com to gain deeper insights into their leadership style and strategies.

References

- Baehr, P. (2016) Human rights: Universality in practice. Springer.
- Barnett, M. L., Henriques, I. and Husted, B. W. (2020) "Beyond good intentions: Designing CSR initiatives for greater social impact", *Journal of Management*, 46(6), 937-964.
- Beji, R., Yousfi, O., Loukil, N. and Omri, A. (2021) "Board diversity and corporate social responsibility: Empirical evidence from France", *Journal of Business Ethics*, 173, 133-155.
- Caiado, R. G. G., Leal Filho, W., Quelhas, O. L. G., de Mattos Nascimento, D. L. and Ávila, L. V. (2018) "A literature-based review on potentials and constraints in the implementation of the sustainable development goals", *Journal of cleaner production*, 198, 1276-1288.
- Cajaiba-Santana, G. (2014) "Social innovation: Moving the field forward. A conceptual framework", *Technological forecasting and social change*, 82, 42-51.
- Calabrese, A., Costa, R., Levaldi, N. and Menichini, T. (2019) "Integrating sustainability into strategic decision-making: A fuzzy AHP method for the selection of relevant sustainability issues", *Technological Forecasting and Social Change*, 139, 155-168.
- Caputo, F., Pizzi, S., Ligorio, L., & Leopizzi, R. (2021). Enhancing environmental information transparency through corporate social responsibility reporting regulation. *Business Strategy and the Environment*, 30(8), 3470-3484.
- Carree, M. A., & Verheul, I. (2012). What makes entrepreneurs happy? Determinants of satisfaction among founders. *Journal of Happiness Studies*, 13, 371-387.
- De Lima, W. (2023) "How do social entrepreneurs compete? Entrepreneurial legitimacy in the Silicon Valley of humanitarian innovations", *Technovation*, 125, 102767.
- Freeman, M. (2022) Human rights, John Wiley & Sons.
- Fukuyama, F. (2018). Identity: The demand for dignity and the politics of resentment, Farrar, Straus and Giroux.
- Gunawan, J., Permatasari, P. and Tilt, C. (2020) "Sustainable development goal disclosures: Do they support responsible consumption and production?", *Journal of Cleaner Production*, 246, 118989.
- Gupta, S., Kumar, V. and Karam, E. (2020) "New-age technologies-driven social innovation: What, how, where, and why?", *Industrial Marketing Management*, 89, 499-516.
- Ibrahim, H., Liu, X., Zariffa, N., Morris, A. D. and Denniston, A. K. (2021) "Health data poverty: an assailable barrier to equitable digital health care", *The Lancet Digital Health*, 3(4), e260-e265.
- Jenkins, A. S., Wiklund, J., & Brundin, E. (2014). Individual responses to firm failure: Appraisals, grief, and the influence of prior failure experience. *Journal of Business Venturing*, 29(1), 17-33.
- Kickul, J. and Lyons, T. S. (2020) Understanding social entrepreneurship: The relentless pursuit of mission in an ever changing world. Routledge.
- Martins, T., Braga, A., Ferreira, M. R. and Braga, V. (2023) "Start today and finish yesterday—Social innovation as a contribution to the community", *Global Business and Organizational Excellence*.
- Moser, A. and Korstjens, I. (2018) "Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis", *European journal of general practice*, 24(1), 9-18.
- Nikolaev, B., Boudreaux, C. J., & Wood, M. (2020). Entrepreneurship and subjective well-being: The mediating role of psychological functioning. *Entrepreneurship Theory and Practice*, 44(3), 557-586.

- Ormston, R., Spencer, L., Barnard, M. and Snape, D. (2014). "The foundations of qualitative research", *Qualitative research practice: A guide for social science students and researchers*, 2(7), 52-55.
- Qu, S. Q. and Dumay, J. (2011) "The qualitative research interview", *Qualitative research in accounting & management*, 8(3), 238-264.
- Sabokro, M., Masud, M. M. and Kayedian, A. (2021) "The effect of green human resources management on corporate social responsibility, green psychological climate and employees' green behavior", *Journal of Cleaner Production*, 313, 127963.
- Satalkina, L. and Steiner, G. (2020) "Digital entrepreneurship and its role in innovation systems: A systematic literature review as a basis for future research avenues for sustainable transitions", *Sustainability*, 12(7), 2764.
- Sivam, A., Dieguez, T., Ferreira, L. P. and Silva, F. J. (2019) "Key settings for successful open innovation arena", *Journal of Computational Design and Engineering*, 6(4), 507-515.
- Stahl, G. K., Brewster, C. J., Collings, D. G. and Hajro, A. (2020) "Enhancing the role of human resource management in corporate sustainability and social responsibility: A multi-stakeholder, multidimensional approach to HRM", *Human Resource Management Review*, 30(3), 100708.
- Stephan, U., Rauch, A., & Hatak, I. (2023). Happy entrepreneurs? Everywhere? A meta-analysis of entrepreneurship and wellbeing. *Entrepreneurship Theory and Practice*, 47(2), 553-593.
- Tomuschat, C. (2014) *Human rights: between idealism and realism*. Oxford University Press.
- Waldman, D. A., Putnam, L. L., Miron-Spektor, E. and Siegel, D. (2019) "The role of paradox theory in decision making and management research", *Organizational Behavior and Human Decision Processes*, 155, 1-6.
- Witkamp, M. J., Raven, R. P. and Royakkers, L. M. (2011) "Strategic niche management of social innovations: the case of social entrepreneurship", *Technology Analysis & Strategic Management*, 23(6), 667-681.

Work in Progress Papers

Lean and Safety Management in Primary Care Centres: An Italian Case Study

Caterina Pozzan, Anna Tiso, Fabrizio Ronchi and Chiara Verbano

Department of Management and Engineering, University of Padova, Vicenza, Italy

caterina.pozzan.1@phd.unipd.it

anna.tiso.2@phd.unipd.it

fabrizio.ronchi@unipd.it

chiara.verbano@unipd.it

Abstract: The primary care sector is globally recognised as the pillar of an efficient and patient-centred care model. Despite its importance, many countries fail to ensure equitable access and individualised care. This problem significantly impacts the most vulnerable part of the population, such as chronic and elderly patients. In this context, considering the large number of people affected by multiple diseases, multidisciplinary and multi-organisation teamwork has become fundamental to guarantee high levels of quality, increasing patient satisfaction, and continuity of care. Furthermore, working in a multidisciplinary primary care team can improve information exchange between care providers and patients, positively impacting on clinical performance. Despite these opportunities, the primary care workforce is often overloaded in its daily activities and not adequately organised and coordinated to avoid burnout experiences and inefficient skills deployment. In this context, implementing Lean and Safety Management (L&SM) as a process improvement methodology can increase care pathways performance and integration, patient safety and satisfaction through the reduction of wastes and risks. The current study aims to implement L&SM in a primary care centre in Italy, with the final goal of increasing productivity and effectiveness in daily activities performed by primary care physicians. This project is carried out following the DMAIC cycle; a managerial approach that combines qualitative and quantitative techniques to support process improvement. The implementation roadmap will combine HLM and CRM, planning to achieve the main steps listed as follows: mapping the care demand and the available resources to define the focus of the study; identifying the most representative and critical patients; mapping the target care pathway; identifying wastes and risk and their root causes; identifying critical aspects and improvement events; implementing countermeasures; evaluating and monitoring results. The expected results of the forthcoming months consist of measurable improvements within the healthcare pathway, supporting the optimisation of the primary care centre. Moreover, this initiative may represent a pilot case for other similar projects, contributing to spread L&SM culture throughout primary care centres with benefits for both patients and clinical staff.

Keywords: Lean management, Lean healthcare, Risk management, Quality management, Primary care centres

1. Introduction and Theoretical Background

Primary care is globally recognised as a “key process in the health system that supports first-contact, accessible, continued, comprehensive and coordinated patient-focused care” and represents a key factor to achieve high levels of accessibility and diffusion of health and well-being (World Health Organization & United Nations Children’s Fund, 2020). Despite the importance of primary care, many countries fail to ensure equitable access and a high level of quality, resulting in unnecessary hospitalisations, inappropriate prescriptions, and lack of continuity throughout the care pathway (OECD, 2020). This problem significantly impacts the most vulnerable part of the population, such as chronic and elderly patients (Doetsch et al., 2023). Moreover, the daily activities of primary care workforce are often not adequately balanced in terms of both workload and task distribution, resulting in burnout experiences and inefficient skills deployment (OECD, 2020). When multiple disease conditions are considered, clinical staff teamwork becomes fundamental to guarantee high levels of quality, increasing patient satisfaction and continuity of care. In fact, working in a multidisciplinary primary care team fosters information exchange between care providers and patients with a positive impact on clinical performance (Li et al., 2023). Implementing Healthcare Lean Management (HLM) can increase care pathways performance and integration of care services (Tiso et al., 2022; Tlapa et al., 2020). It has been well established that HLM is the most applied improvement approach in healthcare worldwide (Henrique & Godinho Filho, 2020), and its aim is to support continuous process improvement through a wide range of tools and practices, reducing waste, and spreading the ‘lean’ culture within the organisation (Radnor et al., 2012). In the last decade, the request for high levels of care quality has increased dramatically aiming at improving not only efficiency, effectiveness, and timeliness, but also people-centredness, equity, integration of care and safety (World Health Organization, 2020). Safety is particularly crucial because adverse events in care processes are one of the leading causes of disability and death worldwide (Ghebreyesus, 2018; World Health Organization, 2019, 2020). For this reason, combining Clinical Risk Management (CRM) with HLM can positively impact quality of care (Crema & Verbano, 2015). In fact, CRM aims to improve the quality and safety of healthcare services by identifying adverse events and acting to prevent and minimise risks and harm to patients (World Health Organization, 2011). The

current project integrates both methodologies to implement Lean and Safety Management (L&SM) within a primary care centre in Italy, with the final aim of increasing productivity and effectiveness in daily care processes performed by primary care physicians, patient safety and satisfaction.

2. Methodology

The purpose of the current study is to implement L&SM within a primary care centre, with the final goal of increasing productivity and effectiveness in daily activities carried out by primary care physicians, patient safety and satisfaction. In recent years, regional governments have encouraged collaboration between general practitioners in integrated centres to ensure continuity of care and coordination with other health providers at different levels of assistance. The future objective is to strengthen this model by establishing multi-disciplinary primary care centres across each region, including not only general practitioners, but also specialised outpatient and home care services. This research is carried out in a primary care centre located in northern Italy that represents an emerging recent association model in which eight general practitioners, five nurses, and six administrative clerks are employed. This centre serves approximately 9000 patients, providing primary care for both acute needs and chronic disease management. Additionally, milder emergency situations are handled to prevent patients from going to the hospital emergency department.

The project implementation plan follows the DMAIC cycle; a managerial approach that combines qualitative and quantitative techniques to support process improvement (Pyzdek, 2003). The implementation roadmap will combine HLM and CRM (Crema & Verbano, 2015), following the Define, Measure, Analyse, Improve, and Control phases, as described:

- Define: mapping the care demand and the available resources to define the focus of the study; identifying the most representative and critical care patients.
- Measure: mapping the target care pathway; defining and collecting data on key process indicators; identifying and analysing critical aspects, risks, and wastes; defining specific and measurable improvement objectives.
- Analyse: analysing the root causes of risks and wastes.
- Improve: identifying and prioritising improvement events; implementing countermeasures.
- Control: evaluating and monitoring results; standardising improvement achievements.

3. Preliminary Results

In recent months, the 'Define' phase has been completed, resulting in the identification of type 2 diabetes mellitus (DM2) as the target care pathway. At first, the availability of resources and the activities carried out were identified and evaluated through staff interviews, field observations and the extraction and analysis of patients' database. This resulted in a first aggregated healthcare process mapping that highlights resources consumption depending on different diseases. Among them, DM2 was the most resource-intensive disease in terms of healthcare services provided, high volume of patients and long time needed to manage this chronic care pathway, which is characterised by a wide range of activities and requires proactive contact with patients.

Concerning the 'Measure' phase, the target pathway was initially mapped through the Makigami process map, resulting in two independent maps. The first refers to all activities performed while the patient is inside the centre and includes medical and nursing visits, prescriptions for drugs and exams and referrals to specialists. Instead, the second includes administrative activities performed to manage periodic drug prescriptions that are processed in response to a patient request, but do not require patients to physically visit the centre. Each of these maps is linked with a set of indicators to measure waiting time, patients' volumes and activities performance, such as the number of calls and the number of prescriptions. These preliminary maps provide the first qualitative wastes identification. Among the most significant are the lack of standardisation of similar activities carried out by different physicians and the frequent failure to update patient information in the database.

In the coming months, all measures will be completed by collecting field data and retrieving specific information from the patients' database. A detailed Value Stream Map (VSM) will be created to identify risks and wastes, allowing the definition of specific and measurable improvement objectives. Then, the risks and wastes analysis will be performed using the 'Failure Mode and Effects Analysis' (FMEA) and the 'Five Why's technique' (5Ws). Improvement solutions will be defined and implemented, and the results will be measured and monitored over time with the final objective of improving DM2 care pathway performance, patient safety and satisfaction.

Acknowledgements

Caterina Pozzan gratefully acknowledges the financial support from the University of Padova (C96E22000360007).

Chiara Verbano gratefully acknowledges the financial support from the European Union – Next Generation EU, in the context of The National Recovery and Resilience Plan, Investment Partenariato Esteso PE8 "Conseguenze e sfide dell'invecchiamento", Project Age-It (Ageing Well in an Ageing Society) - CUP C93C22005240007.

References

- Crema, M., & Verbano, C. (2015). How to combine lean and safety management in health care processes: A case from Spain. *Safety Science*, 79. <https://doi.org/10.1016/j.ssci.2015.05.007>
- Doetsch, J. N., Schlösser, C., Barros, H., Shaw, D., Krafft, T., & Pilot, E. (2023). A scoping review on the impact of austerity on healthcare access in the European Union: rethinking austerity for the most vulnerable. *International Journal for Equity in Health*, 22(1), 3. <https://doi.org/10.1186/s12939-022-01806-1>
- Ghebreyesus, T. A. (2018). How could health care be anything other than high quality? In *The Lancet Global Health* (Vol. 6, Issue 11). [https://doi.org/10.1016/S2214-109X\(18\)30394-2](https://doi.org/10.1016/S2214-109X(18)30394-2)
- Henrique, D. B., & Godinho Filho, M. (2020). A systematic literature review of empirical research in Lean and Six Sigma in healthcare. In *Total Quality Management and Business Excellence* (Vol. 31, Issues 3–4). <https://doi.org/10.1080/14783363.2018.1429259>
- Li, M., Tang, H., & Liu, X. (2023). Primary care team and its association with quality of care for people with multimorbidity: a systematic review. *BMC Primary Care*, 24(1), 20. <https://doi.org/10.1186/s12875-023-01968-z>
- OECD. (2020). *Realising the Potential of Primary Health Care*. OECD. <https://doi.org/10.1787/a92adee4-en>
- Pyzdek, T. (2003). *The Six Sigma Handbook - A Complete Guide for Green Belts, Black Belts, and Managers at All Levels. Search.*
- Radnor, Z. J., Holweg, M., & Waring, J. (2012). Lean in healthcare: The unfilled promise? *Social Science and Medicine*, 74(3). <https://doi.org/10.1016/j.socscimed.2011.02.011>
- Tiso, A., Pozzan, C., & Verbano, C. (2022). Health lean management implementation in local health networks: A systematic literature review. In *Operations Research Perspectives* (Vol. 9). Elsevier Ltd. <https://doi.org/10.1016/j.orp.2022.100256>
- Tlapa, D., Zepeda-Lugo, C. A., Tortorella, G. L., Baez-Lopez, Y. A., Limon-Romero, J., Alvarado-Iniesta, A., & Rodriguez-Borbon, M. I. (2020). Effects of Lean Healthcare on Patient Flow: A Systematic Review. In *Value in Health* (Vol. 23, Issue 2). <https://doi.org/10.1016/j.jval.2019.11.002>
- World Health Organization. (2011). Patient safety curriculum guide. Multi-Professional Edition. In *Patient Safety*.
- World Health Organization. (2019). *Patient safety. Key facts*. <https://www.who.int/news-room/fact-sheets/detail/patient-safety>
- World Health Organization. (2020). *Quality health services: a planning guide*.
- World Health Organization, & United Nations Children's Fund. (2020). *Operational framework for primary health care: transforming vision into action*

Lean and Safety Management: A Project to Improve the Continuity of Care for Chronic Patients

Anna Tiso¹, Joan Cháfer-Vilaplana², Macarena Torrego-Ellacuría², Manuel Francisco Morales Contreras³ and Chiara Verbano¹

¹University of Padova, Italy

²Hospital, Spain

³Universidad Pontificia Comillas, Madrid, Spain

anna.tiso.2@phd.unipd.it

jchaferv@gmail.com

macarena.torrego@gmail.com

mfcontreras@icade.comillas.edu

chiara.verbano@unipd.it

Abstract: Enhancing the quality of care for chronic patients means guaranteeing the delivery of integrated care. Integrated health systems help overcome the fragmentation of care processes, by bridging the organisational, managerial, and informational gaps, with the final purpose of improving the access, quality, and continuity of services. Indeed, chronic patients require the assistance of multiple providers, referring to different levels of care (primary, secondary, or tertiary). However, hyper-specialised and fragmented healthcare systems hamper the achievement of these goals, resulting in suboptimal care, higher cost, and poor quality of care. The implementation of lean and safety management (L&SM) within hospitals demonstrated its ability to improve efficiency, effectiveness, and patient satisfaction, through proactive identification and reduction of risks and wastes. The novelty lies in adopting this approach to act on integration and continuity between different levels of care. With this aim, a L&SM project has been developed in a Spanish hospital. The project focuses on improving the discharge process from internal medicine to primary care, essential to prevent further patients' readmissions. In fact, cooperation between the hospital and primary care is crucial to ensure continuity in chronic pathways, providing adequate assistance to patients' healthcare and social needs. The first results show how this approach was instrumental to engage in the project all key actors involved in the pathways, overcoming departmental barriers, and enhancing continuity of care. Moreover, this approach facilitated the convergence of identified inefficiencies with the clinicians' interests, focusing only on the aspects considered of primary importance, such as the communication between the hospital and primary care. The expected outcomes encompass the achievement of a better understanding of the process, the identification of the criticalities in terms of risks and waste, the proposal and implementation of improvement interventions. This project represents an innovative attempt to implement L&SM outside of hospital boundaries to improve new performance dimensions, focusing on integration and continuity of care.

Keywords: Lean healthcare, Healthcare management, Chronic care pathways, Care integration

1. Introduction

Continuity of care is the degree to which care events are experienced by patients as coherent and interconnected over time and consistent with their health needs. This concept constitutes a pillar in the field of chronic disease management, characterised by long and complex care pathways (WHO, 2018). However, healthcare compartmentalisation in silos creates gaps in the transition between diverse levels and settings of care, hindering the realisation of an integrated and continuous health service (Nolte and McKnee, 2008), thus affecting the quality of care provided.

Chronic diseases represent a relevant burden for the economic and social sustainability of the healthcare system globally. Their impact on healthcare resources, overall measured by the cost of hospitalizations, highlights the need to improve not only the clinical, but also the organisational and managerial structures of chronic pathways. Indeed, thanks to a coordinated network of health care providers who support the patient at home, acute episodes resulting in hospitalisations should be rare events. In this sense, ensuring continuity of care means 13% fewer hospital admissions, 27% fewer visits to an emergency department, and thus 17% lower medical costs (WHO, 2018). Furthermore, hospital readmissions represent a risk and a harm to patients, emphasising the probability of adverse events and complications.

With the aim of strengthening continuity across care boundaries, improvement initiatives are needed.

Health Lean Management (HLM) is a managerial approach to continuously improve patient value, through the systematic reduction of wastes. The benefits obtained mainly touch services timeliness and efficiency (McDermott *et al.*, 2022). However, to strive for quality health services, other dimensions should also be

considered: effectiveness, safety, integration, people-centredness, and equity (WHO, 2006). For this purpose, HLM can be combined with clinical risk management into a Lean and Safety approach (L&SM). The synergies between the two approaches allow the integration of their tools and practices to proactively manage risks and wastes simultaneously (Crema and Verbano, 2016).

Although HLM counts several experiences in the last twenty years literature, the analysis of the integration between hospital and territorial care represents a novelty for this methodology. Indeed, just few attempts of chronic pathways improvements from primary care to hospital and vice versa have been reported in the empirical HLM literature (Paccagnella, Mauri and Spinella, 2012; Patton *et al.*, 2015; Sampalli *et al.*, 2015; Kutz *et al.*, 2018; Van Eeghen, Littenberg and Kessler, 2018; Lee *et al.*, 2019; Kelendar, Faisal and Mohammed, 2020). The same happens for L&SM. However, L&SM could have great potential in this setting, reducing wastes and risks that limit coordination between hospital and territory, thus fostering continuity of care.

Therefore, this paper aims to evaluate how L&SM could be implemented in chronic care, extending the field of application beyond hospital boundaries, towards territory. Therefore, the current work analyses an ongoing L&SM project conducted in a Spanish hospital to improve the quality of care provided to COPD (Chronic Obstructive Pulmonary Disease) patients.

In this way, the paper contributes to the academic debate, broadening the application setting of an already existing methodology, the L&SM. It also supports practitioners and healthcare providers with a step-by-step guide for future project developments. Finally, this research addresses the theme of chronic diseases as a major burden for the economic and social sustainability of the healthcare sector.

2. Methodology

Considering the immaturity of knowledge and experience in the adoption of L&SM in integrated hospital and territorial care (Tiso, Pozzan and Verbano, 2022), a project was developed to assess the effectiveness of this approach in this setting.

The study was carried out at a Spanish hospital, covering a population of 350.000 people, and counting 5000 employees. The hospital provides tertiary and secondary care services and it is connected to a network of 15 primary care centres of pertinence.

The project regarded COPD patients, critical for the high number of readmissions to the hospital, with a particular focus on the discharge process from the Internal Medicine (IM) ward to primary care (PC). This process was analysed, extracting data from the hospital database, interviewing the health workforce involved, and through direct observation in the field. The information collected allowed to map the target process using HLM tools, and to identify risks and wastes. Moreover, risks have been assessed with FMEA (Failure Mode and Effect Analysis) in focus groups with experts and process stakeholders. Future project steps will lead to the identification of root causes of risks and wastes, arriving to collaboratively generate a countermeasure for each of them. Once the countermeasures are prioritised, an implementation plan will be developed.

3. Results

The preliminary results of the project, which is still in progress, are presented following the DMAIC cycle (Pyzdek and Keller, 2009).

3.1. Define

The project team consisted of a professor, a PhD student, a master student from the Department of Management and Engineering, a professor of Operations Management, a data analyst, a physician from the innovation unit of the hospital, and a physician from IM. Preliminary analysis of the hospital database highlighted the consistent number of hospital readmissions due to COPD exacerbations (an average of 2,08 readmissions per patient during 2021-2022). Indeed, in that period, about 14% of hospitalised patients for COPD exacerbation as the main diagnosis was then readmitted to the hospital at least once. For these reasons, the project aim was to reduce the number of COPD readmissions, improving the quality and continuity of care provided by the hospital and the territory. Thanks to flow analysis, it was possible to design a demand map, highlighting the COPD hospitalisation process characterised by the highest patient volumes: IM admitted 451 patients out of 843; these 451 patients were then discharged equally at home, with a PC follow-up, or at home, with the hospital follow-up. Additionally, the demand map highlighted how the hospital constitutes the main provider of health services for COPD patients, showing a lack of territorial care.

Therefore, the analysis focused on the discharge process from IM to home, considering both hospital and PC follow-up.

3.2. Measure

Data about the process (patients, activities, resources, timings) were gathered through data mining from hospital and PC databases, semi-structured interviews with IM, PC, Emergency Department (ED) and discharge liaison nurse workforce, and direct observations (Gemba walks) in ED and IM. Thanks to information collected, a swim lane map of the target process was elaborated, also contributing to identify the main criticalities:

- Communication gaps between hospital and primary care;
- Difficulties in carrying out COPD diagnosis tests in primary care centres;
- Lack of patient education to precociously recognise the symptoms of the disease;
- Lack of coordinated care between hospital and territorial care in planning the therapy for the patient (i.e.: drugs);
- PC follow-up is responsibility of the patient.

3.3. Analyse

The identified criticalities were deepened and analysed, arriving to define a list of specific wastes and risks. Some examples regarded:

- Delayed specialistic exam prescriptions inside IM;
- Duplication of patient information transcriptions in IM;
- Missing patient information in hospital software;
- Many hospitalised patients do not have a diagnosis;
- Delays in discharges;
- Delays in IM follow-up visits;
- Frequent changes in prescribed therapies;
- Many patients miss PC follow up visits.

Risks were then assessed through FMEA, assigning a value - the Risk Index - to each of them based on their impact, frequency, and detectability. In addition, the causes of each risk were defined.

In the next phases, a root cause analysis will be performed for each waste to determine its source. The risks and wastes analysis will then be integrated with key performance indicators, and the countermeasures will be generated through brainstorming with the health workforce involved.

3.4. Improve

In this phase, countermeasures to criticalities will be identified. Preliminarily, it is possible to consider some provisional intervention areas:

- Internal reorganisation of PC centres, eliminating non-value added activities to free up time for nurses to perform spirometry;
- Training nurses in spirometry to increase the number of workers available for the diagnostic activities;
- Educating patients and caregivers about COPD symptoms, drugs or oxygen administration, and risks;
- COPD prevention campaigns to smokers;
- Creating a procedure to increase communication at discharge between hospital wards and PC physicians.

During the following project steps, these initiatives will be discussed and validated in terms of feasibility and priority with the entire project team to formulate an implementation plan.

4. Conclusions

This study provides evidence on how L&SM implementations can be extended to the analysis of chronic pathways that cross different levels of care, specifically involving hospital and territory. The DMAIC cycle helped to well structure the project, and HLM tools contributed to map the process and identify inefficiencies across the various settings considered. Finally, risk management with FMEA added the perspective of patient safety, especially in the transition between different levels of care. Therefore, L&SM could represent a comprehensive approach to improve the continuity of care provided in chronic pathways, helping to define the inefficiencies that cause gaps between the hospital and territorial care. Indeed, it is acknowledged that the lack integration

and continuity of care is often caused by time losses, errors, missing standardised procedures, and duplications, improvable through the application of L&SM.

This article contributes to enrich the knowledge about L&SM, by providing an empirical experience that extends the application field beyond the hospital boundaries. At the same time, it also offers a social impact, working on the burden of chronic diseases, improving their access to care, reducing their hospitalisations, thus reducing cost and risks.

Acknowledgements

The Authors gratefully acknowledge the Grant VERB_CON_UNIMPRESA21_01 funded by the University of Padova.

Chiara Verbano gratefully acknowledges the financial support from the European Union – Next Generation EU, in the context of The National Recovery and Resilience Plan, Investment Partenariato Esteso PE8 "Conseguenze e sfide dell'invecchiamento", Project Age-It (Ageing Well in an Ageing Society) - CUP C93C22005240007.

References

- Crema, M. and Verbano, C. (2016) 'Identification and development of Lean and Safety projects', *Safety Science*, 89, pp. 319–337. Available at: <https://doi.org/10.1016/j.ssci.2016.07.007>.
- Kelendar, H., Faisal, M. and Mohammed, M. (2020) 'Lean Processes Mapping of Diabetic Patient Flow in Primary Healthcare Centres in Kuwait Highlights Opportunities for Fewer Patient Visits', *World Family Medicine Journal/Middle East Journal of Family Medicine*, 18, pp. 4–11. Available at: <https://doi.org/10.5742/MEWFM.2020.93814>.
- Kutz, T.L. et al. (2018) 'Improving comprehensive care for patients with diabetes', *BMJ Open Quality*, 7(4), p. e000101. Available at: <https://doi.org/10.1136/bmjog-2017-000101>.
- Lee, P. et al. (2019) 'Using lean thinking to improve hypertension in a community health centre: a quality improvement report', *BMJ Open Quality*, 8(1), p. e000373. Available at: <https://doi.org/10.1136/bmjog-2018-000373>.
- McDermott, O. et al. (2022) 'Lean Six Sigma in Healthcare: A Systematic Literature Review on Motivations and Benefits', *Processes*, 10(10). Available at: <https://doi.org/10.3390/pr10101910>.
- Nolte, E. and McKnee, M. (2008) *Caring for people with chronic conditions: a health system perspective*. Open University Press.
- Paccagnella, A., Mauri, A. and Spinella, N. (2012) 'Quality Improvement for Integrated Management of Patients With Type 2 Diabetes (PRIHTA Project Stage 1)', *Quality Management in Health Care*, 21(3), pp. 146–159. Available at: <https://doi.org/10.1097/QMH.0b013e31824d1917>.
- Patton, C.M. et al. (2015) 'Increasing Efficiency in Evaluation of Chronic Cough: A Multidisciplinary, Collaborative Approach', *Quality Management in Health Care*, 24(4), pp. 177–182. Available at: <https://doi.org/10.1097/QMH.0000000000000072>.
- Pyzdek, T. and Keller, P. (2009) *The Six Sigma Handbook, Third Edition*. McGraw Hill Professional.
- Sampalli, T. et al. (2015) 'Improving wait times to care for individuals with multimorbidities and complex conditions using value stream mapping', *International Journal of Health Policy and Management*, 4(7), pp. 459–466. Available at: <https://doi.org/10.15171/ijhpm.2015.76>.
- Tiso, A., Pozzan, C. and Verbano, C. (2022) 'Health lean management implementation in local health networks: A systematic literature review', *Operations Research Perspectives*, 9, p. 100256. Available at: <https://doi.org/10.1016/j.orp.2022.100256>.
- Van Eeghen, C.O., Littenberg, B. and Kessler, R. (2018) 'Chronic care coordination by integrating care through a team-based, population-driven approach: a case study', *Translational Behavioral Medicine*, 8(3), pp. 468–480. Available at: <https://doi.org/10.1093/tbm/ibx073>.
- WHO (2018) 'Continuity and coordination of care: a practice brief to support implementation of the WHO Framework on integrated people-centred health services'. World Health Organization.

Late Submissions

Leadership in a Military Context: The Case of the Dubai Police

Mardeya Alblooshi

Dubai Police Academy, UAE

mardeya2002@hotmail.com

Abstract: Leadership is among the critical factors in any police force that helps them to achieve their goals. However, limited studies have focused on police leadership and those studies were conducted in western countries. Thus, this study aims to explore police leadership in a military context in non-western countries. Qualitative research methodology was used to achieve the aim of this study and to answer the research questions. Dubai Police which focuses on fostering human capital including leaders, was selected as a sample for military context. Semi-structured interviews were conducted with ten leaders working in the Dubai Police force who were asked about police leader conceptualisation, whether police leaders are born or made, what are the most important traits for police leaders and, finally, leadership development strategies in the police forces. NVivo Software (version 14) was used to analyze the data. The interviews have obtained the aim of the study and answered the research questions. The findings provided a more complete in-depth description of the leadership in a military context. The results showed that; 1) Police leadership conceptualization is defined as influencing others and also it is process. 2) Police leaders are born and made. 3) Strong communication skills, decision making and integrity were observed to be among the most important traits for police leaders. 4) Police leadership development strategies included formal education, training courses, experience and learning in practice. The study had extended police leadership literature, and confirmed the applicability of results of studies conducted in western countries on those of non-western ones that give priority to police leaders and focuses on achieving organizational strategic direction. Concerning practical contributions, this study serves as foundational research for other researchers who are interested in this field in a new regional context, especially in the Dubai Police.

Keywords: Dubai Police, Police leader traits, Leadership conceptualization, Police leadership development strategies, Military

1. Introduction

Alsuwaidi and Mansor (2022) argued that leadership in police forces is a significant element of the managerial process. Moreover, it is among the vital predictors in judging whether police forces are able to effectively perform in dynamic environments (Pearson-Goff and Herrington, 2014).

Pearson-Goff and Herrington (2014:p.5) demonstrated that effective police leaders engage the following five activities; *'creating a shared vision, engendering organizational commitment, caring for subordinates', driving and managing change, and problem solving'*.

Given the significance of leadership in police forces, some authors (Schafer, 2010; Shrestha, 2015) argued that there is a dearth of literature concentrated on police leadership matters, moreover, the majority of studies have been conducted in western countries, such as the United States of America (Oliver, 2013) and Norway (Nilsen, Aaserud and Filstad, 2018).

Furthermore, Hunt and Fedynich (2019) stated that the concept of leadership is shifting in the following areas; definitions, dimensions and methodologies. Finally, there is a new emerging theme in leadership theories such as Transformational, Ethical, Charismatic leadership in which leadership is related to the culture (Shrestha, 2015).

Dubai, one of the seven emirates within the United Arab Emirates (UAE), is considered as one of the safest cities in the world (Alsuwaidi and Mansor, 2022). Indeed, the Dubai Police force established in 1956, is categorized as one of the best security forces at a global level. Currently, the Dubai Police prioritizes its leadership, which is part of its strategic direction. Since the Dubai police announced its three strategic directions, innovation in organizational capabilities is the third main direction which focuses on developing the human capital - including leaders- effectively and efficiently (Dubai Police, 2023).

Moreover, the Dubai Police has won several international excellence awards (e.g. European Foundation for Quality Management model) and local excellence awards (e.g. Dubai Government Excellence program) and in which leadership is a significant enabler and concept (Dubai Police, 2023). Thus, Dubai police leaders could be one of the success factors that lead the Dubai Police to achieve this categorization, as according to Boshears (2020) there is direct relationship between the efficiency and productivity of police forces and the efficiency and productivity of their leaders. However, limited empirical studies have focused on leadership in the Dubai Police (Alameri, et al., 2019; Al Saadi and Al Mahasina, 2021; Alsuwaidi and Mansor, 2022). Thus, there is a need for additional studies to deepen the understanding of leadership in the Dubai Police context.

Recognising the theoretical and contextual gaps, this study aimed to investigate the following research questions; how is leadership conceptualized in a police context? Are police leaders born or made? What are the most significance traits for police leaders? What strategies are used to develop police leadership?

Thus, this study is among the first to overcome the limitation and investigate police leadership in a new context such as the Dubai Police.

2. Literature Review

2.1 Leadership in a Police Context

Pearson-Goff and Herrington (2014:p.2) defined policing as ‘the act of enforcing laws, preventing and solving crime, maintaining order, and promoting security and safety through the use of legitimate authority’. Toch (2008:p.82) described police forces as ‘hyper-bureaucratic military organizational attributes-those of formal rank, formal hierarchy, and a chain of unquestioned and unquestioning command’.

Haberfeld (2006:p.3) defined police leadership as ‘the ability to make a split second decision and take control of a potentially high-voltage situation that evolves on the street’.

Police forces are interested in leadership for several reasons: it supports police performance (Alsuwaidi and Mansor, 2022), leads to the achievement of required results and organizational effectiveness (Al Saadi and Al Mahasina, 2021) and enhances organizational innovation (Alameri, et al., 2019).

Several scholars attempt to identify major themes in police leadership. Schafer (2010) clarified that the main two directions in policing leadership literature are; 1) Implementation of both organizations’ and leadership theories in a police context. 2) Empirical studies aimed to describe how ranked employees go about engaging in the acts of leadership, supervision and management, principally through the progress of behavioral typologies. While Haake, Rantatalo and Lindberg (2017) added other themes by mentioning that international police leadership studies have focused on how it can be characterized (i.e. transactional or transformative), factors that influence leadership, and the culture(s) of the police informing leadership initiatives .

Indeed, the majority of prior studies have been conducted in western countries (Pearson-Goff and Herrington, 2014). Thus, there is a need for additional studies in police forces in new areas such as Dubai to compare to what degree studies related to police leadership in western countries are applicable to other forces.

2.2 Are Police Leaders Born or Made?

Chaturvedi, et al. (2012) clarified that scholars are interested to investigate to what extent both genetic and environmental factors influence leadership. That’s why some scholars (Durić and Šumi, 2018; Afrianty, 2020) clarified that whether leaders are born or made is a debatable question.

The following could be the reasons of the difficulty for identifying whether leaders are born or made. First, Conger (2004) clarified that many factors structure the degree to which a person becomes a leader, such as genetic predisposition, family environment, education experiences, hardships, work experiences, managers, organizational incentives, and training. Second, the leadership theories are also not agreed in terms of whether leaders are made or born. Shrestha (2015), reviewed the main leadership theories and found that some leadership theories such Great-man theory and Trait theory believe that leaders are born, while Behavioural theory states that leadership is made. Contemporary leadership theories (e.g. Emotional intelligence, Servant, Team , Cross- cultural) consider leadership is by choice. Finally the new leadership theories (e.g. Transformational, Ethical, Charismatic) stated that leadership is by culture.

However, it has been observed that there were a lack of police studies that attempted to answer this question. Thus, there is a need for additional empirical studies to investigate whether leaders are born or made in police forces, such as the Dubai Police where focusing on human capital, including police leaders, is one of organizational strategic direction.

2.3 Police Leaders’ Traits

Zaccaro, Kemp and Bader (2004:p.104) defined leader traits is ‘as relatively stable and coherent integrations of personal characteristics that foster a consistent pattern of leadership performance across a variety of group and organizational situations’. These characteristics represent a variety of stable individual differences, comprising personality, skills temperament, abilities, motives, cognitive and expertise (Zaccaro, Kemp and Bader,. 2004).

Oliver (2013) clarified that identifying police leaders' common traits has as a positive impact on police leaders job effectiveness, since effective and positive leaders are distinguished by traits that are not usually owned by non-leaders (Zaccaro, Kemp and Bader, 2004)

Limited studies have been conducted in a police context (Schafer, 2010; Oliver, 2013; Shrestha, 2015), however, there is no agreement among these studies with regards to the most significant traits required for police leaders. For example, the study by Schafer (2010) highlighted 12 police leaders common traits and habits, on the other hand Oliver (2013) suggests 12 competencies, 12 qualities, and 11 attributes required for effective police leaders.

Furthermore, it has been noticed that these studies were conducted in the United States of America (Schafer, 2010; Oliver, 2013). Therefore, Oliver (2013) called for additional research that might generate other findings and conclusions.

2.4 Police Leadership Development Strategies

Leadership development is defined as 'the expansion of an organization's capacity to enact basic leadership tasks needed to accomplish shared, collective work' (McCauley, Van Velsor, and Ruderman, 2010).

Dalakoura (2010) clarified that leadership development strategies are generally designed and conducted either internally by the human resources specialists or externally through consultants, and academic co-coordinators.

There is agreement among some scholars (Durić and Šumi, 2018; Boshears, 2020) that leadership development is significant for police leaders. Boshears (2020) highlighted the fact that leadership development strategies provide leaders with the crucial skills needed to perform their tasks more effectively, to solve work challenges, besides making capable decisions.

Few police scholars aimed to identify police leadership development strategies. For instance Durić and Šumi (2018) categorized the following three strategies; 1) Structured programs which concentrated on a human's skill development (e.g. feedback, coaching, assessment, action-oriented development plan). 2) Developing leadership through experiences: since on-the job experience through assessment, challenge, and support advances leaders' capabilities. 3) Deliberately developmental organizations which is considered a new concept that reflects continuous leadership developmental practices in the culture of an organization. While Nilsen, Aaserud and Filstad (2018) argued that there are three leadership development strategies as follows: 1) Teaching leadership in official leadership training programs or more specific education. 2) Learning in practice: such as learning by doing, conversations and exchanging ideas with experienced leaders. 3) Learning through reflection: which involves leadership development outside of a leader's everyday practice and utilizing peers for the chance for reflection, in addition to exchanging experiences with others.

Murphy (2022) clarified that the picture of police leadership development literature is incomplete. Thus, there is a need for additional studies in new contexts to generalize the achieved results.

3. Methodology

The study employed qualitative methodology, using semi-structured interviews with participants from the Dubai Police.

Qu and Dumay (2011) illustrated that semi-structured interviews are based on prepared questioning directed by recognised themes in a convenient and systematic way. Moreover, these kinds of interviews can disclose central and often unknown features of individual and organisational behaviour.

As there was insufficient knowledge about police leadership, particularly in non-western countries, interviewees from the Dubai police force were asked questions with regards to 1) Identifying how police leadership is conceptualized, 2) Highlighting whether police leaders are born or made, 3) Recognising the most important traits for the leaders in police forces, and 4) Distinguishing leadership development strategies in police forces.

3.1 Participants and Interview Guide and Procedures

The sample consisted of ten police leaders in the Dubai Police, seven were males and three females. The participants' ranks ranged from lieutenant to colonel. Regarding job titles, three were directors, the other three were head of sections and the rest had other job titles.

The interview protocol drew from the main themes in the literature, such as police leadership conceptualization, their main traits and current strategies used in police leadership development.

To determine the adequate amount of interviews required for qualitative studies, many scholars depend on theoretical saturation, which is defined as '*the point at which no unique information or themes are observed in the data*' (Guest, Bunce and Johnson, 2006:p59). Conducting ten interviews, each of approximately one hour, helped to reach data saturation.

To preserve the identity of the participants, they were distinguished by referring to them with numbers from 1 to 10, as will appear when the results are discussed in the next section.

3.2 Data Analysis Procedure

Codes were influenced by the data, the relevant literature, the study aim and the research questions. On completion of the interviews, the qualitative data analysis process began. With the goal of exploring police leadership, a thematic analysis was used to code the data. A maximum of three layers of nodes was used in coding to conduct a fine-grained analysis of the qualitative data.

Rowley (2012) stated that NVivo software is very helpful in simplifying the analysis of interview transcripts. Thus, NVivo (version 14) was used to analyse the collected data.

4. Findings and Discussion

The following four themes emerged from the collected data:

4.1 Police Leadership Conceptualization

Participants were asked: *what do you mean by police leadership?* All answered this question. The conceptualization focused on the following two aspects;

Six participants defined leadership by influencing others. For example, participant (3) defined leadership as 'The leaders ability to influence others behaviour, particularly their followers'. While four participants defined leadership as process. For example, participant (10) defined the concept as 'The ability to manage followers to perform their job responsibilities and requested tasks based on their job designations'.

The use of multiple definitions for leadership was supported in leadership literature in general (Hunt and Fedynich, 2019; Afrianty, 2020) and the police leadership literature (Schafer, 2010). Indeed, most literature found a common theme in many definitions of leadership is influencing others (Schafer, 2010; Afrianty, 2020). According to Afrianty (2020:p.17) leadership is '*skills or abilities to influence others in order to reach a shared goal by making some changes*'.

While according to Alsuwaidi and Mansor (2022) police leadership is related to the managerial process. That's why some scholars believed that leadership is about process (Njoku and Nwosu, 2020). Njoku and Nwosu (2020:p.69) stated leadership '*is about directing other people to do complete tasks*'.

The findings supported two of four leadership conceptualization dimensions presented by Ronald (2014) who defines leadership as influencing others and it is a process. As a direction for future research, there is a need for additional police studies to examine the following two dimensions of leadership conceptualization; it requires a group environment and it targets achieving a specified goal.

4.2 Are Police Leaders Born or Made?

Participants were asked: *are police leaders born or made?*. Nine participants believed that police leaders are born and made. For example, participant (1) said (both, leaders are born and made. Leaders are born with some qualities and at the same time there are leadership skills such as innovation which can be learned). While only participant (2) clarified that police leaders are made, as he said 'leadership is related to the situation, as a leader in one situation might be a follower in another due to the presence of someone who is more capable than him).

The majority of participants believed that police leaders are born and made. This result is aligned with those existing in leadership literature (Shrestha, 2015; Afrianty, 2020). An explanation for this result may be found in evidence provided by Conger (2004), who clarified there are several biographic and social factors that help people to become leaders.

While limited participants argued that leaders are made, which is aligned with the behavioural theory that states that leaders are made not born (Shrestha, 2015), and Zaccaro, Kemp and Bader (2004) who clarified that some people can be productive as leaders in some circumstances but not in others.

This study is considered to be among one of the first studies that have investigated this question in a police context in non-western countries, which lead to generalize the achieved results.

4.3 The Most Significant Police Leaders Traits

Participants were asked: *what are the most significant traits required for police leaders?* This section has focused on the top three traits that were agreed among all participants as follows;

First, participants clarified that strong communication skills are one of the main traits for police leaders. For instance, participant (9) mentioned 'police leaders must have strong communication skills to help in dealing with clients complaints and be able to manage followers problems and direct them effectively'.

Second, participants stated that decision making is a vital trait for police leaders, as participants (10) said 'police leaders must be able to make the right decisions based on the available information'.

Third, participants agreed that integrity is amongst the compulsory traits of police leaders. For instance, respondent (3) stated 'integrity is a necessary trait for police leaders, in all departments and police stations'.

Njoku and Nwosu (2020) mentioned that police leaders' jobs requires some personnel skills to be effective. The findings showed the three most significant police leaders traits are as follows;

First, strong communication skills. Pearson-Goff and Herrington (2014) argued that communication is one of the major traits that police leaders should have, as the police leader needs to communicate with both the police force and their followers. Thus, the achieved results are aligned with some police studies (Oliver, 2013; Garner, 2018) that considered strong communication skills as a vital trait that help police leaders to perform their tasks effectively.

Second, decision making. Garner (2018) justified the significance of decision making as a trait for police leaders, since they have potential for affecting the force and the community. The findings supported several empirical studies that have concluded that decision making was among the police leaders' traits (Pearson-Goff and Herrington, 2014; Garner, 2018).

Third, integrity. Oliver (2013) clarified that a police force is an integrity-based occupation for leaders, which justifies considering integrity as a required trait for police leaders. The achieved result is supported in studies that target police leaders (Schafer, 2010; Oliver, 2013) which found that integrity is one of the key traits for police leaders.

Oliver (2013) argued that there is lack of studies with regards to the most significant required traits for police leaders. Thus, the findings filled this gap in literature, and showed that strong communication skills, decision making and integrity are among the most significant police leaders traits in a non-western context like the Dubai police which has never been examined. So, it answered Oliver (2013)'s call for further research about police leaders' traits. Moreover, the results were aligned with police leaders' studies that have been conducted in western countries such as the United States of America (Garner, 2018), United States of America, United Kingdom, Canada, New Zealand and Australia (Pearson-Goff and Herrington, 2014).

4.4 Police Leadership Development Strategies

Participants were asked: *what are leadership development strategies used in Dubai Police?* The participants mentioned four strategies as follows;

First, all participants agreed that joining formal education programs is an effective means for leadership development. For instance, participant (10) said 'Dubai Police enhances leadership by encouraging the leaders to join education programs like Master's degree to improve their knowledge'.

Second, all participants clarified that participating in training courses improve leaderships in the police context. For example participant (3) said 'Dubai police conduct leadership training courses to enhance leaders capabilities by attending internal and external training courses'.

Third, eight participants stated that developing leadership through experiences is a vital strategy that is used frequently in the Dubai police force. For example, participant (4) said 'Exchanging experiences with peers and former leaders helps a lot to develop police leadership'.

Finally, seven participants illustrated that learning in practice is an effective tool to boost police leadership progress. For example participant (7) mentioned 'working in teams, discussing with subordinates and working in different projects help to develop leadership and to find solutions for work challenges'.

Police forces allocate time and resources for leadership development to improve leaders duties and responsibilities (Boshears, 2020). This study indicated that the following four strategies are effective for leadership development ;

First, Nilsen, Aaserud and Filstad (2018) demonstrated that formal education promotes a leadership role and helps to gain more self-confidence on how they function as leaders. The findings confirmed the previous studies which concluded that formal education is a tool to develop police leadership (Schafer, 2010; Murphy, 2022).Second, Boshears (2020) clarified that police forces must run training courses to help police officers to become leaders. Indeed the result is consistent with those studies (Schafer, 2010; Shrestha, 2015) that provided evidence that training is one of the strategies utilized in police leadership development strategies. Third, according to Conger (2004) experience is one of the factors that shape the degree to which a human resource becomes a leader. Therefore, some studies have revealed that experience is among some leadership development strategies (Nilsen, Aaserud and Filstad, 2018; Murphy, 2022) in the police context. Fourth , Nilsen, Aaserud and Filstad, (2018) clarified that learning in practice is one of the successful strategies in leadership development. Therefore, the findings help to generalize the prior studies that showed that learning in practice (Nilsen, Aaserud and Filstad, 2018) and some examples such as feedback that enhances learning by doing (Schafer, 2010; Durić and Šumi, 2018) and networking with leaders from other police forces (Schafer, 2010) are considered as an adequate strategy for leadership development.

Murphy, (2022) discussed that there is lack of studies with regards to police leadership development strategies. That's why, this research has helped to fill in this gap and clarified that formal education, training programs, experience and learning in practice are among effective leadership development strategies in police forces.

Moreover, police leadership development strategies conducted in the Dubai Police supported the classification of leadership development strategies in a police context (Nilsen, Aaserud and Filstad, 2018; Durić and Šumi, 2018) and at the same time, are aligned with studies examined in western countries like in Canada (Murphy, 2022) and Sweden (Österlind and Haake, 2010). Finally, the result confirmed the argument by Boshear (2020) concerning the necessity of the integration of both formal (i.e. education) and informal (i.e. experience) learning into leadership development strategies.

5. Conclusion

This qualitative study aimed to explore leadership in a military context in non-western countries. Semi-structured interviews were used to collect the data. NVivo Software (version 14) was utilized to analyze the data from ten Dubai Police leaders.

This study was able to fulfill its aim and answer the research questions. The major findings were: 1) Police leadership is conceptualized as influencing others and it is a process, 2)Police leaders are born and made, 3)Main traits required for police leaders are strong communication skills, decision making and integrity, and 4) Police leadership development strategies included formal education, training courses, experience and learning in practice.

The findings have contributed to police leadership literature in several ways. First, one of the gaps identified is that only limited studies investigated police leadership (Schafer, 2010) and these limited studies were in western countries (Pearson-Goff and Herrington, 2014). Thus, this is among the first study to have investigated police leadership in non-western regions such as the Dubai Police. Second, evidence regarding whether leaders are born or made is mixed, as leadership theories have categorized leaders as either born or made (Shrestha, 2015) and at the same time others agree that leadership is much wider and several gene and environmental factors help in formalizing leadership (Conger, 2004). Thus, the results provided a better understanding of the holistic nature of leadership.

In terms of contextual contributions, the findings revealed that although the Dubai Police operates in a non-western country, the results showed the generalizability of police studies that have been examined in western countries. The justification might be that the Dubai Police applies best practices at work (Dubai Police, 2023), which includes leadership issues. Moreover, the findings provided empirical justifications for Dubai which is considered among the safest cities in the world (Alsuwaidi and Mansor, 2022) and Dubai Police as one of best security forces at a global level (Dubai Police, 2023). The lesson is that the investment in police leaders could be one of the reasons for the resulting high international level of safety and security. Thus, police forces should consider police leadership expenditure as a long-term investment that will benefit the forces.

This study provided useful implications for police forces who prioritise leadership at the workplace. The findings suggested that police forces must realise that it is not sufficient to rely on employing leaders who own required traits, as there is a need also for a mechanism that clarifies- in parallel- used leadership development strategies. Furthermore, the obtained results help the police forces to identify the significance link between organizational strategic goals such as enhancing human capital – including leaders- and used policies such as leadership development strategies in order to fulfill those strategic goals.

6. Limitations and Direction for Future Research

There are several limitations related to the current study. First, this study was conducted only in one police force. There is a need for other empirical studies to be conducted in different non- western countries to generalise the results. Second, there is a need for other studies that consider other factors such as gender and rank (Njoku and Nwosu, 2020). Finally, there is a need for additional studies to examine police leaders inefficacy in order to generalize the achieved results from Schafer (2010) in a new context.

References

- Afrianty, T.W., 2020. Are leaders born or made?: A point of view. *Jurnal Penelitian IPTEKS*, 5(1), pp.17-23.
- Alameri, M., Ameen, A., Isaac, O., Khalifa, G.S. and Bhaumik, A., 2019. Examining the moderating influence of job complexity on the relationships between empowering leadership and organizational innovation. *Test Engineering and Management*, 81(1), pp.1930-1937.
- Al Saadi, A.M.R. and Al Mahasina, M.A., 2021. The impact of creative leadership on organizational effectiveness: strategic thinking is a variable and mediating case study-Dubai Police. *International Journal of Education Humanities and Social Science*, 4(1), pp.17-33.
- Alsuwaidi, M.E. and Mansor, N.B., 2022. The impact of transformational leadership on the performance of police the mediation role of knowledge management. *Mathematical Statistician and Engineering Applications*, 71(3), pp.349-362.
- Boshears, G.A., 2020. Every Officer is a Leader: The Benefits of Bottom-Up Leadership Development.
- Chaturvedi, S., Zyphur, M.J., Arvey, R.D., Avolio, B.J. and Larsson, G., 2012. The heritability of emergent leadership: Age and gender as moderating factors. *The Leadership Quarterly*, 23(2), pp.219-232.
- Conger, J.A., 2004. Developing leadership capability: What's inside the black box? *Academy of Management Perspectives*, 18(3), pp.136-139.
- Dalakoura, A., 2010. Differentiating leader and leadership development: A collective framework for leadership development. *Journal of Management Development*, 29(5), pp.432-441.
- Dubai Police. *The official Dubai Police Portal*. Available at: <<https://www.dubaipolice.gov.ae>> [Accessed 6 May 2023].
- Durić, D. and Šumi, R., 2018. Leadership development in Slovenian police: Review and way forward. *Criminal Justice and Security in Central and Eastern Europe*, pp.105-118.
- Garner, R., 2018. Leadership as a police chief: Advice from those who've been there. *Applied Psychology in Criminal Justice*, 14(2), pp.171-182.
- Guest, G., Bunce, A. and Johnson, L., 2006. How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), pp.59-82.
- Haberfeld, M.R. (2006). *Police Leadership*. Upper Saddle River, NJ: Pearson/Prentice Hall.
- Haake, U., Rantatalo, O. and Lindberg, O., 2017. Police leaders make poor change agents: leadership practice in the face of a major organisational reform. *Policing and Society*, 27(7), pp.764-778.
- Hunt, T. and Fedynich, L., 2019. Leadership: Past, present, and future: An evolution of an idea. *Journal of Arts and Humanities*, 8(2), pp.22-26.
- Murphy, J., 2022. *Taking the reins: An exploratory study of police leadership succession and succession planning in Canada*. Doctoral dissertation. Simon Fraser University.
- McCauley, c. D., Van Velsor, E., & Ruderman, m. N. (2010). Introduction: Our view of leadership development. In E. Van Velsor, c. D. mccauley, & m. N. Ruderman (eds.), *The center for creative leadership handbook of leadership development* (3rd ed.) (pp. 1-26). San Francisco: Jossey-Bass.
- McCauley, c. D., Van Velsor, E., & Ruderman, m. N. (2010). Introduction: Our view of leadership development. In E. Van Velsor, c. D. mccauley, & m. N. Ruderman (eds.), *The center for creative leadership handbook of leadership development* (3rd ed.) (pp. 1-26). San Francisco: Jossey-Bass.
- Nilsen, J.A., Aaserud, T. and Filstad, C., 2018. Learning how to lead police investigations. *International Journal of Police Science & Management*, 20(3), pp.185-195.
- Njoku, K. and Nwosu, F., 2020. Examining main and interaction effects between and among command ranks of police professionals on perceived leadership characteristics: A quantitative cross-sectional study. *Journal of Functional Education; Summer*, 3(5), pp.86-106.
- Österlind, M. and Haake, U., 2010. The leadership discourse amongst female police leaders in Sweden. *Advancing Women in Leadership Journal*, 30 (16), pp.1-24.
- Oliver, P., 2013. *What are the key competencies, qualities, and attributes of the African American municipal police chief?* Doctoral dissertation. Antioch University.

- Pearson-Goff, M. and Herrington, V., 2014. Police leadership: A systematic review of the literature. *Policing: A Journal of Policy and Practice*, 8(1), pp.14-26.
- Qu, S.Q. and Dumay, J., 2011. The qualitative research interview. *Qualitative Research in Accounting & Management*, 8(3), pp.238-264.
- Ronald, B. (2014). Comprehensive leadership review-literature, theories and research. *Advances in Management*, 7(5), pp.52-66.
- Rowley, J., 2012. Conducting research interviews. *Management Research Review*, 35(3/4), pp.260-271.
- Schafer, J.A., 2010. Effective leaders and leadership in policing: traits, assessment, development, and expansion. *Policing: An International Journal of Police Strategies & Management*, 33(4), pp.644-663.
- Shrestha, T.M., 2015. Leadership Adaptation and Traits in Nepalese Police Forces. *International Journal of Education and Literacy Studies*, 3(3), pp.1-23.
- Toch, H., 2008. Police officers as change agents in police reform. *Policing & Society*, 18(1), pp.60-71.
- Zaccaro, S.J., Kemp, C. and Bader, P., 2004. Leader traits and attributes. *The Nature of Leadership*, pp.101-124.

The Impact of CSR on the Financial Performance of Firms in Different Industries: An Example from the Financial Industry and the Healthcare Industry

Ioannis Gkliatis

University of Hertfordshire, London, UK

igliatis@gmail.com

Abstract: This Paper Analyses The Impact Of Corporate Social Responsibility (CSR) On Corporate Financial Performance (CFP) in the financial and healthcare sectors in China, examining the annual financial data and ESG scores of a total of 124 companies between 2016 and 2021 and selecting ROA, corporate financial leverage, company size and board size as variables. A panel data regression was used to conduct an econometric analysis to examine the impact of social responsibility on corporate financial performance in the total industry, the financial industry and the healthcare industry, respectively. The empirical analysis of this study concluded that the effect of CSR on corporate financial performance has different results in different industries, the effect of CSR on CFP is significant and negative in the healthcare industry and insignificant in the financial industry. However, there are some limitations to this study. The study only considered the financial sector and the healthcare sector and was not able to include a number of other sectors for comparison. The study was also limited by the sample size of CSR in Chinese companies, which made the model less convincing, and the choice of variables also affected the results. However, these provide ideas and provide a pavement for future research.

Keywords: CSR, Financial performance, Financial industry, Healthcare industry

1. Introduction

1.1 Introduction

CSR (Corporate Social Responsibility) has been an important measure of business and society for the past few decades, since the inception of the theory, and has been used by many researchers as an important link in exploring the relationship between companies and their stakeholders in a social context.

CSR is also considered as a key factor in ensuring economic efficiency from the macro level down to the corporate level, and CSR has become a global phenomenon. And it is necessary and essential for companies to fulfil their basic social, environmental, and economic responsibilities in accordance with their own and the environment's development needs. However, scholars such as who insist that firms are profit-driven show that Abad-Segura, Cortés-García and Belmonte-Ureña (2019) who insist that firms are profit-driven show that the majority of companies focus on their corporate interests and growth, while lacking ecological and social concerns. In the long term, the benefits of investing in CSR are uncertain and this uncertainty can deplete the funds available to companies for development.

In this paper, this article uses the health care and finance sectors, which are not particularly sensitive to environmental factors, to overcome the heterogeneity of a random sample and the lack of cross-sector comparability of studies mentioned before.

1.2 Research Objectives

The objective of this article is to investigate the impact of CSR on CFP in different companies and to make recommendations for future directions based on the findings. The whole topic of the article is based on the financial sector and the healthcare sector in China, by comparing the data of the two sectors individually and comparing the data of the two sectors as a whole.

This study aims to fill a gap in the existing literature on the impact of CSR on CFP in a number of different industries, and to select panel data for the subsequent empirical analysis, while all headset data were obtained from the publicly available Eikon database to ensure data integrity and feasibility of the study.

2. Literature Review and Theory Development

This section is divided into two main sections, firstly, it is a review of the concept of CSR and the relevant theoretical literature. Secondly, it presented the importance of different empirical research in choosing the effect of CSR on CFP, and the importance of CFP in exploring the motivations of companies to be socially responsible. Thirdly, it summarizes and compares the choice of indicators from previous studies about CSR and CFP. Finally, it describes the research gaps and the value of this paper.

2.1 Corporate Social Responsibility (CSR)

2.1.1 The concept development of CSR

According to the Wang and Sarkis (2017) conclusions, there is no clear consensus in current researches as to whether or what kind of impact CSR has on CFP. CSR proponents argue that companies' investments in CSR have a positive impact on their long-term future development, ensuring their own interests while taking risks for their stakeholders (Albuquerque, Koskinen and Zhang, 2019); On the other hand, opponents believe that investment in CSR will deplete the company's existing resources, leading to a decrease in market efficiency and a reduction in the allocation of resources, as well as creating a divergence of interests between shareholders (Martin, Wiseman and Gomez-Mejia, 2019).

CSR is a concept that encompasses a wide range of perspectives, concepts and approaches, and has gone through a long and diverse period of development, which will lead to a more systematic and operational framework of CSR theory based on evolving social circumstances and expectations.

2.1.2 Relevant theory

- Stakeholder theory

Stakeholders include the company's shareholders, employees, consumers, suppliers and other trading partners, as well as groups such as government departments, the media, environmentalists and even the natural environment, which are affected by the company's activities (Clarkson, 1995). Some of these stakeholders share the risks of the enterprise, some pay for the enterprise's business activities, and some monitor and control the enterprise, and by influencing financial performance through strategic corporate decisions, similarly, companies use stakeholder management as a means to maximize corporate profits (Rose, Flak and Sæbø, 2018).

According to the stakeholder theory, a company that invests material and financial resources from its stakeholder groups into its production operations should naturally meet the needs of its stakeholders, just as employees want higher wages, consumers want high quality products and shareholders want high returns (Javed *et al.*, 2020). From the shareholders' point of view, managers act as intermediaries and employees responsible only for maximizing shareholders' wealth, which can lead to problems in resource allocation and a lack of market mechanisms.

- Sustainability theory

Based on the consideration of shareholder and stakeholder relations, and considering that CSR affects a company's reputation for purpose of improving its performance, companies with a high CFP tend to improve their relationships with stakeholders by investing more in socially sustainable practices in order to achieve better overall performance (Martínez-Ferrero and Frías-Aceituno, 2013).

In summary, the basic concepts of both theories are consistent with the sustainability of the financial sector and the health care industry. In order to promote the development of the financial sector in the health care industry, to improve the quality of services and products in the health care industry, as well as the welfare and interests of stakeholders and shareholders; and for the financial industry, which plays an important role in China's national economy, it is extremely important to build a good financial market environment. In this study, the relationship between CSR and CFP in the financial and health care industry will be further investigated to understand and compare the extent to which CSR affects CFP in different sectors, and to make more specific recommendations.

2.2 The Importance of CFP and its Relevant to CSR

From previous studies it can be concluded that the most fundamental social responsibility of a company before its legal, ethical and charitable responsibilities, is the economic responsibility to ensure that it aims to make a profit (Carroll, 1991).

Bharadwaj (1995) argues that the performance of a firm is a demonstration of the results of the firm's development and affects a number of development aspects such as customer satisfaction and investment, but Campbell (1990) suggests that the performance of a firm is limited in a number of ways and reflects the behaviors of the firm as well as the results of the firm which are also influenced by the behaviors of the firm. Research on the relationship between CSR and CFP has been debated for a long time and there is no unified conclusion, and the results of empirical research are also diverse (Scholtens, 2008; Lu *et al.*, 2014a; Tiep Le, Ngo and Aureliano-Silva, 2021).

Margolis and Walsh (2003) used meta-analysis to summarize 127 studies on CSR and financial performance from 1972-2002, of which 109 studies used CSR as the independent variable and financial performance as the dependent variable. The findings of another 54 of these studies showed that CSR had a positive effect on CFP, except for seven papers that showed a negative correlation between CSR and CFP, and the remaining part of the papers indicated that there is no correlation between CSR and CFP. Lu et al. (2014) summarized 84 studies over a ten-year period from 2002 to 2011, of which 38 studies showed a positive correlation between CSR and CFP, six other studies showed a negative effect of CSR on CFP, and the remaining studies showed a non-significant correlation, besides, also highlighting the effect of time and space on the relationship between CSR and CFP. The remaining studies showed a non-significant correlation. In conclusion, exploring the relationship between CSR and CFP in a specific community is a promising area that could also have important academic and practical value (Lu *et al.*, 2014b).

2.2.1 Positive effect of CSR to CFP

Research on the relationship between CSR and CFP first appeared in 1972 in an empirical study in which the share price growth of 14 companies over the past six months was measured by Moskowitz (1972) using the reputation index method by comparing it with the average growth of the Dow Jones index. Although this study is representative in early period, the overall sample size of the experiment is too small and the methodology for assessing CSR is not comprehensive, nor is the choice of short-term share price as a measure of financial performance representative.

Hamilton and Tschopp (2012) used the KDL index to measure social corporate responsibility, while ROA, ROE and Tobin's Q were chosen to measure the change in financial performance of the firm and a positive relationship was found between them using a multiple linear regression model. The same linear regression method was used in a study on the Indian IT industry, where M.Chandra and Kumaran (2019) was concluded that return on equity (ROE) was positively correlated with industry net income, that CSR was a necessary tool for firms, and that the return on corporate spending on CSR was significant and contributed to improved corporate performance.

There are numerous studies have shown that the impact of CSR on CFP is positive (Quere, Nouyrigat and Baker, 2015; Choi and Lee, 2018). The impact of CSR on corporate performance is influenced by the size of the company, with companies with low CSR generally having lower returns on performance than companies with high CSR, and CSR having a positive impact on companies by providing them with the means to develop corporate innovation and market competitiveness and in doing so improving corporate performance (Jang *et al.*, 2019; Bahta *et al.*, 2020). By engaging in socially responsible practices, companies can build a positive brand image and brand reputation to gain stakeholder support, and by attracting more investors, employees, customers and consumers, both financial performance and non-financial benefits will increase. (Mishra and Suar, 2010).

2.2.2 Negative effect of CSR to CFP

Vance's 1975 study is similar to Moskowitz's (1972) in that they both used share price growth as a measure of financial performance, which is clearly flawed, but the difference is that Vance's findings show a negative correlation between CSR and CFP, with the higher a firm's CSR performance the lower its share price (Vance, 1975). The Lioui and Sharma (2012) chose the KLD index to measure CSR and the ROA and Tobin's Q to measure CFP for 1,746 firms between 1992 and 2008, and the statistical results showed a statistically negative relationship. However, considering the reciprocal effect between the company's sustainability efforts and the company's innovative research and development, this makes CSR a potential cost that promotes innovative research and development and indirectly creates additional value for the company.

Over the years, companies have been increasing the amount of resources allocated to CSR, and if the increase in CSR spending is seen as a response to stakeholder preferences, then it is more of an over-investment in CSR to satisfy the private interests of the company's managers (managers and shareholders) while largely satisfying the company's interests, resulting in damage to the interests of the company and its stakeholders (Barnea and Rubin, 2010; GRAVES, 2014; Kao *et al.*, 2018). Corporate social responsibility is costly to implement, and when the costs exceed the benefits to the company, it can lead to lower profits and reduced shareholder benefits. In addition, when stakeholders engage in false CSR practices because of their personal preferences, it can reduce the trust of investors, employees and consumers and the reputation of the company (Waddock and Graves, 1997; Franco *et al.*, 2020).

While some past research has confirmed the uncertainty of the relationship between CSR and CFP, most studies have not denied that long-term investment in CSR brings benefits including, but not limited to, reputation and company credibility.

2.3 Purpose of this Paper

Based on the gaps in the current research, it is necessary to conduct targeted research on companies in different industries, for example, to explore the relationship between CSR and CFP in specific regions and industries, to make the results more reliable. Besides, the industry attribute of the firm has also been considered as an important variable in previous studies, and the findings suggest that the impact of CSR on CFP varies across industries. Most studies have focused on a broad industry or single industry perspective, and few studies have examined the relationship between CSR and CFP within a specific industry.

Another point mentioned earlier is that CSR is a very broad definition, which is influenced by many factors such as time and space, and it is difficult to standardize on different economic trends in different countries, which leads to different definitions and practices of CSR in each country.

While the financial sector can generate some corporate value from CSR performance itself, the healthcare sector needs to establish CSR committees across the sector and enhance corporate value from CSR practices (Kuzey *et al.*, 2021). This study attempts to explore the impact and differences of CSR on the financial performance of companies in the health care and financial industries in the context of a developing socialist country like China. It also provides a reference for research on the correlation between CSR and financial performance in emerging markets and supports the future sustainable development of Chinese companies.

3. Methodology

3.1 Data

3.1.1 Data selection

This study collected and used data from the financial and healthcare sectors from 2016 to 2021. And the data source is the TRBC economic sector of the Thomson Reuters Eikon database. TRBC is a five-tier framework consisting of economic subgroups, 28 business subgroups, 54 industry subgroups, 136 industries and 837 activities (Refinitiv, 2022). The financial sector and the health insurance sector are among the ten economic sectors. And the financial sector includes banks, insurance, life, financial technology, REITs, etc.; the healthcare sector includes biotechnology, healthcare services and technology companies, pharmaceuticals, biotechnology, and medical research.

Data filtering is the key to the panel data regression, after pre-processing the sample data, combining with real data analysis, outlier detection, etc., a total of 67 companies in the financial sector and 63 companies in the healthcare sector were obtained. Given that the model requires a certain sample size, which means that the larger the sample size the more accurate the estimates will be, and the larger the sample size will also help to improve the accuracy of the results and provide a better fit. Therefore, this study does not classify industries within industries, but rather uses the TRBC database classification for industry classification. Considering that China is a developing country, the level of participation and assessment of CSR in various industries is not high, so the overall data volume is small and it is difficult to distinguish a certain sector within the industry, for example, the financial industry includes banking, insurance, trust, securities and leasing, etc. Therefore, the data of the whole financial industry and the healthcare industry were selected as the target of the study and used for data analysis after basic screening and deletion.

3.1.2 Variables selection

- Dependent variables

Many existing studies use the accounting metrics return on total assets (ROA) and return on net assets (ROE) as the measures of financial performance of companies. According to previous studies, corporate performance should not only consider the input from shareholders, but also the income generated from corporate liabilities (Hamilton and Tschoop, 2012; Lioui and Sharma, 2012; M.Chandra and Kumaran, 2019). Therefore, this study chooses ROA as a measure of corporate performance to measure how much net profit per unit of corporate assets can bring to the firm.

- Independent variables

Environmental indicators include how the company protects the environment; social indicators measure how the company deals with its stakeholders such as employees and customers; and governance indicators ensure that the company is accountable to its shareholders by adopting transparent accounting practices and preferring an honest and diverse leadership structure (Friede, Busch and Bassen, 2015; Wang and Sarkis, 2017; Franco *et al.*, 2020). In this study, ESG scores from the Eikon database were chosen as the core explanatory variables for measuring corporate social responsibility.

- Control variables

For the choice of control variables, based on previous research this article chose firm size (SIZE), financial leverage (LEV) and board size (BSIZE).

The first is the firm size (SIZE), which affects the financial performance of the firm, with the larger the firm the more likely it is to achieve economies of scale (Vuong, 2022). The next is Financial Leverage (LEV) which is the ratio of (net profit + income tax + finance costs) to (net profit + income tax). Financial leverage is a variable that can be used to measure business capability and risk levels in the majority of companies, and is used as a control variable in many CSR studies (Stamolampros and Symitsi, 2022). The last one is the size of the board of directors (BSIZE). According to the stakeholder theory, there are shareholders who invest in CSR because of their personal preference, but this is to the detriment of the company and the size of the board of directors is also affected by the size of the company, so the size of the board of directors is chosen as the third control variable (Kuzey *et al.*, 2021).

3.2 Research Model and Hypothesis

3.2.1 Research hypothesis

Based on the review of the literature, this study proposes three research hypotheses:

H1: Corporate social responsibility and financial performance are correlated in the healthcare sector

H2: Corporate social responsibility and financial performance are correlated in the financial sector

H3: Corporate social responsibility and financial performance are correlated in healthcare and financial sectors

3.2.2 Research model design

In regression models, when the number of independent variables exceeds two, the model is usually referred to as a multiple linear regression model. In practical problems, where the factors influencing financial performance are considered to include multiple variables such as firm size, financial leverage and firm size, the use of a multiple linear regression model is more effective and more appropriate to the needs of this study than a linear regression model with a single independent variable.

Equation 1:

$$ROA_{i,t} = \alpha_0 + \alpha_1 CSR_{i,t} + \alpha_2 BSIZE_{i,t} + \alpha_3 LEV_{i,t} + \alpha_4 SIZE_{i,t} + \omega_{i,t}$$

Similarly, to test the hypothesis 2 and hypothesis 3, it developed the following two models.

Equation 2:

$$ROA_{i,t} = \beta_0 + \beta_1 CSR_{i,t} + \beta_2 BSIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 SIZE_{i,t} + \omega_{i,t}$$

Equation 3:

$$ROA_{i,t} = \theta_0 + \theta_1 CSR_{i,t} + \theta_2 BSIZE_{i,t} + \theta_3 LEV_{i,t} + \theta_4 SIZE_{i,t} + \omega_{i,t}$$

"i" represents the industry; "t" represents the year.

ROA is the dependent variable representing the financial performance of the firm; CSR is the independent variable, which is the ESG score from the Eikon database

This study uses STATA 16 to test the impact of CSR on corporate financial performance using multiple linear regressions based on panel data. Before conducting the regression analysis, firstly, the correlation between the variables was tested using the central VIF to exclude the effect of multicollinearity on the experimental results, secondly, the Breusch-Pagan test was used to test for the presence of heteroskedasticity in the multiple regression model, and finally, the choice of the fixed-effects or random-effects model was based on the Hausman test.

4. Data Analysis and Discussion

This section regresses the panel data mentioned in Section 3 to analyze the impact of CSR practices on corporate financial performance in the financial and healthcare sectors and analyses the regression results of the three hypotheses to obtain different effects of CSR between different sectors.

4.1 Descriptive Analysis

The results of the descriptive analysis are given in Table 1, which includes financial indicators and CSR indicators for two industries.

Table 1: Descriptive statistical of Health care & Financial industry

Variable	Obs	Mean	Std.Dev.	Min	Max
Year	620	2019		2017	2021
ESG	515	39.46	15.07	3.110	79.80
ROA	620	0.0700	0.0912	0.00100	1.551
BSIZE	620	8.835	4.944	0	23
LEV	620	0.571	0.268	0.0430	0.952
SIZE	620	7.002	3.854	2.115	13.74

The data in Table 1 shows that the mean of the overall ESG score is 39.46, with a standard deviation of 15.07, indicating a relatively even selection of data, with not too many extreme or extreme small values, and a relatively even distribution between 2017 and 2021. Despite the large extreme difference, the ESG score is generally stable considering the size of the company and the time they spent investing in CSR.

The maximum and minimum values of ROA are 0.007 and 1.551 respectively, with a large difference and a mean value of 0.0700, indicating that there are individual companies whose ROA far exceeds the general level of the industry, but given the large number of companies in the two industries and their different sizes, this does not affect further analysis of the data.

As for the control variables, there are cases where the minimum value is zero due to changes in the number of board members between 2017 and 2021 for some companies, which have been screened out of the data for companies that have had a board of directors for less than two years in the last five-year period.

Table 2: Descriptive statistical of Health care industry

Variable	Obs	Mean	Std.Dev.	Min	Max
Year	315	2019		2017	2021
ROA	315	0.125	0.105	0.00700	1.551
ESG	237	37.75	15.81	3.110	79.80
BSIZE	315	7.003	4.528	0	16
LEV	315	0.338	0.157	0.0430	0.736
SIZE	315	3.213	0.421	2.115	4.224

Source: author's own

Table 3: Descriptive statistical of Financial industry

Variable	Obs	Mean	Std.Dev.	Min	Max
Year	305	2019		2017	2021
ROA	305	0.0188	0.0198	0.00100	0.189
ESG	278	40.63	14.26	6.730	78.23
BSIZE	305	10.75	4.459	0	23
LEV	305	0.783	0.132	0.112	0.947
SIZE	305	4.596	0.666	2.674	5.968

In order to explore the differences between companies in the financial and healthcare sectors, descriptive statistics are presented in Tables 3 and 4 respectively.

Compared to the healthcare sector, the financial sector generally has a lower ROA in terms of mean ($0.0188 < 0.125$), minimum ($0.00100 < 0.0070$) or maximum ($0.189 < 1.551$) values. It is clear that the healthcare sector has a higher return on assets and a more profitable advantage over the financial sector when measuring a company's financial performance in terms of ROA.

Corporate social performance in the two sectors is also similar, with the mean for the financial sector at 40.63 and the mean for the healthcare sector only 2.88 lower than that of the financial sector.

It is worth noting that the mean financial leverage of the Finance sector is 0.783, more than double the mean financial leverage of the Healthcare sector. The maximum and minimum overall financial leverage is also higher for companies in the Financial sector (0.112 to 0.947) compared to the Healthcare sector (0.0430 to 0.736). Similarly, company size is also higher on average in the financial sector (4.596) than in the healthcare sector by approximately 1.383 and the maximum and minimum values of company size are also higher for companies in the financial sector (2.674 to 5.968).

4.2 Correlation Analysis

In order to investigate the impact of CSR on corporate financial performance, this study uses multiple regression-panel methods to regress multiple data from two financial and healthcare industries.

And before conducting the regression analysis, it was necessary to test the correlation between the variables to ensure that the effect of multicollinearity between the data was excluded from the results.

The correlations between data for the healthcare sector, the financial sector and the overall variables for both sectors are shown in Tables-4, Tables-5 and Tables-6.

According to the research of Mela and Kopalle (2002). study correlation between variables does not affect the regression test as long as it is not greater than 0.7. Based on the results in the table, it is easy to find that there is no correlation greater than 0.7 in the overall sample data, the financial sector data, and the healthcare sector data. Therefore, there is no multicollinearity between the statistics and the hypothesis of multicollinearity between the statistics is rejected, and the relevant data can be further tested by panel data regression.

Table 4: Correlation of Health care industry

Variables	ESG	ROA	BSIZE	LEV	SIZE
ESG	1				
ROA	-0.127	1			
BSIZE	-0.0681	-0.0971	1		
LEV	0.0624	-0.178	0.122	1	
SIZE	0.350	-0.144	0.492	0.453	1

Table 4: Correlation of Financial industry

Variables	ESG	ROA	BSIZE	LEV	SIZE
ESG	1				
ROA	-0.0737	1			

Variables	ESG	ROA	BSIZE	LEV	SIZE
BSIZE	0.0636	-0.303	1		
LEV	0.176	-0.618	0.440	1	
SIZE	0.323	-0.435	0.498	0.3803	1

Source: author's own

Table 4: Correlation of Financial industry

Variables	ESG	ROA	BSIZE	LEV	SIZE
ESG	1				
ROA	-0.135	1			
BSIZE	0.0564	-0.288	1		
LEV	0.146	-0.582	0.427	1	
SIZE	0.181	-0.584	0.466	0.3897	1

4.3 Panel Data Regressions

- Fixed effects model

The results of panel data regression are more accurate and informative than correlation analysis. The results of models (1), (2) and (3) show that ESG has a negative relationship with ROA.

Table 5: Fixed-effects model

	(1)	(2)	(3)
	Health care industry	Financial industry	Financial & Health care industry
ESG	-0.00390*** (0.000749)	-0.0000556 (0.0000887)	-0.00145*** (0.000393)
BSIZE	0.00577 (0.00467)	0.000294 (0.000413)	0.00179 (0.00205)
LEV	-0.221** (0.0968)	0.0723*** (0.0213)	-0.131** (0.0643)
SIZE	0.396*** (0.0442)	0.0137* (0.00785)	0.110*** (0.0169)
_cons	-1.021*** (0.144)	-0.105*** (0.0322)	-0.642*** (0.118)
N	237	278	515
R ²	0.3217	0.108	0.096
Prob > F	0.0000	0.0000	0.0000

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: * means the correlation is significant at the 10% level; ** means the correlation is significant at the 5% level; *** indicates correlation is significant at the 1% level.

The core explanatory variable ESG is significant ($p < 0.01$) in the model for both the healthcare sector and the total sector and is not significant in the financial sector. Among the control variables, board size (BSIZE) is insignificant in all models, while financial leverage (LEV) and firm size (SIZE) are significant in all models. The above results demonstrate that there is a correlation (-0.0039) between CSR and CFP in the healthcare sector, and that it is harmful and significant at the 1% level, which also verified the hypothesis 1.

From the overall data regression results, the effect of ESG on firm performance in both industries is significant and negative at the 1% level (-0.00145) and it verified the hypothesis 3 while the effect of BSIZE on firm performance is not significant, and LEV and SIZE are significant at the 5% and 1% levels respectively.

- Random - effects model

Table 6: Random-effects model

	(1)	(2)	(3)
	Health care industry	Financial industry	Financial & Health care industry
ESG	-0.00191***	0.0000578	-0.000157
	(0.000617)	(0.0000702)	(0.000271)
BSIZE	-0.00641*	-0.000622*	-0.00143
	(0.00389)	(0.000350)	(0.00158)
LEV	-0.208***	-0.0536***	-0.102**
	(0.0719)	(0.0147)	(0.0415)
SIZE	0.137***	-0.00160	-0.00624**
	(0.0314)	(0.00315)	(0.00302)
_cons	-0.123	0.0732***	0.194***
	(0.0913)	(0.00932)	(0.0200)
N	237	278	515
R²	0.0001	0.6321	0.0022

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: * means the correlation is significant at the 10% level; ** means the correlation is significant at the 5% level; *** indicates correlation is significant at the 1% level.

The results of the random effects model are shown in Table-6. Based on the model (1), the ESG has a negative effect (-0.00191) on ROA and significant at the 1% level. From the results of models (1) and (3), the effect of ESG on the performance of firms in the health care sector and both two sectors are not significant.

Different from the fixed effects model, the control variable BSIZE is significant at the 10% level in model (1) while BSIZE was not significant in either (2) or (3). Besides, LEV showed negative effect (-0.208 and -0.0536 separately) in model (1) and model (2) and was significant at the 1% level in both models (1) and (2). The other variable SIZE was significant at the 1% level in models (1) and 5% level in (3).

4.4 Hausman Test

In order to clarify which model is more appropriate, the random effects model or the fixed effects model, a Hausman test was conducted.

Table 7: Hausman test result

	Health care	Financial	Health care & Financial
χ^2	101.95	72.50	51.71
$Prob > \chi^2$	0.0000	0.0000	0.0000

Three types of panel data models are commonly used: fixed effects models; random effects models and mixed effects models. In a fixed-effects model, variables do not vary over time, but do vary with individuals. In a random effects model, variables vary not only over time but also with individuals. So, in order to determine the regression model for the study a Hausman test is required. In the results in Table 7, all p-values are less than 0.05, so the original hypothesis is rejected, and the fixed effects model should be used to regress the variables in this study.

5. Conclusions and Future Implication

5.1 Conclusions

This section summarizes the findings of this paper and provides an overview of the relationship between CSR and corporate financial performance in the financial and healthcare sectors in China, as well as recommendations for future corporate implementation of CSR. It also identifies the research theory, methodology and model based on past literature and concludes that the relationship between CSR and corporate performance is negative in companies in the financial and health care sectors and that this relationship is more significant in the health care sector.

5.2 Summarize This Paper and Conclusion

This study examines the impact of CSR on CFP by measuring changes in CSR and corporate financial performance, specifically selecting the financial sector and the healthcare sector. The regression analysis was conducted using panel data, and ROA, ESG, financial leverage (LEV), firm size (SIZE) and board size (BSIZE) were selected as variables, and ESG score was used as a measure to replace CSR of firms. The regression results for the two industries yielded different results, confirming the findings of Scholtens (2008) and Lu *et al.* (2014) et al. that the significance of the effect of CSR on corporate financial performance differs across industries, with the effect of CSR on corporate financial performance being significant in the healthcare industry and indeed insignificant in the finance industry.

The three hypotheses in this paper contribute to this area of research by demonstrating that the relationship between CSR and corporate financial performance is not fixed but can be influenced by different industries and other variables, including time, space, and corporate structure.

References

- Abad-Segura, E., Cortés-García, F. J. and Belmonte-Ureña, L. J. (2019) 'The sustainable approach to corporate social responsibility: A global analysis and future trends', *Sustainability (Switzerland)*, 11(19).
- Abbott, W. F. and Monsen, R. J. (1979) 'On the measurement of corporate social responsibility: Self-reported disclosures as a method of measuring corporate social involvement', *Academy of management journal*, 22(3), pp. 501–515.
- Albuquerque, R., Koskinen, Y. and Zhang, C. (2019) 'Corporate social responsibility and firm risk: Theory and empirical evidence', *Management Science*, 65(10), pp. 4451–4469.
- Aupperle, K. E., Carroll, A. B. and Hatfield, J. D. (1985) 'An empirical examination of the relationship between corporate social responsibility and profitability', *Academy of management Journal*, 28(2), pp. 446–463.
- Bahta, D. *et al.* (2020) 'Corporate social responsibility, innovation capability and firm performance: evidence from SME', *Social Responsibility Journal*.
- Barnea, A. and Rubin, A. (2010) 'Corporate Social Responsibility as a Conflict Between Shareholders', *Journal of Business Ethics*, 97(1), pp. 71–86.
- Bowman, E. H. and Haire, M. (1975) 'A strategic posture toward corporate social responsibility', *California management review*, 18(2), pp. 49–58.
- Carroll, A. B. (1991) 'The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders', *Business Horizons*, 34(4), pp. 39–48.

- Choi, S. and Lee, S. (2018) 'Revisiting the financial performance – corporate social performance link', *International Journal of Contemporary Hospitality Management*, 30(7), pp. 2586–2602. doi: 10.1108/IJCHM-04-2017-0195.
- Clarkson, M. E. (1995) 'A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance', *Academy of Management Review*, 20(1), pp. 92–117.
- Franco, S. et al. (2020) 'Are you good enough? CSR, quality management and corporate financial performance in the hospitality industry', *International Journal of Hospitality Management*, 88(August 2019), p. 102395.
- Friede, G., Busch, T. and Bassen, A. (2015) 'ESG and financial performance: aggregated evidence from more than 2000 empirical studies', *Journal of Sustainable Finance and Investment*, 5(4), pp. 210–233.
- GRAVES, S. A. W. and S. B. (2014) 'THE CORPORATE SOCIAL PERFORMANCE– FINANCIAL PERFORMANCE LINK', *Journal of Corporate Finance*, 26, pp. 164–181.
- Hamilton, T. and Tschoopp, D. J. (2012) 'Reporting in the Americas', 43(4), pp. 563–589.
- Jang, S. S. et al. (2019) 'CSR, social ties and firm performance', *Corporate Governance (Bingley)*, 19(6), pp. 1310–1323.
- Javed, M. et al. (2020) 'The effects of corporate social responsibility on corporate reputation and firm financial performance: Moderating role of responsible leadership', *Corporate Social Responsibility and Environmental Management*, 27(3), pp. 1395–1409.
- Kao, E. H. et al. (2018) 'The relationship between CSR and performance: Evidence in China', *Pacific Basin Finance Journal*, 51(April), pp. 155–170.
- Kuzey, C. et al. (2021) 'CSR performance and firm performance in the tourism, healthcare, and financial sectors: Do metrics and CSR committees matter?', *Journal of Cleaner Production*, 319(October 2020), p. 128802.
- Lioui, A. and Sharma, Z. (2012) 'Environmental corporate social responsibility and financial performance: Disentangling direct and indirect effects', *Ecological Economics*, 78, pp. 100–111.
- Lu, W. et al. (2014) 'A decade's debate on the nexus between corporate social and corporate financial performance: A critical review of empirical studies 2002–2011', *Journal of Cleaner Production*, 79, pp. 195–206.
- M.Chandra, S. and Kumaran, R. (2019) 'Impact of CSR on Firms' Financial Performance – A Study of Select Indian IT Companies', *Jm*, 4(April), pp. 1–55.
- Mani, V., Gunasekaran, A. and Delgado, C. (2018) 'Enhancing supply chain performance through supplier social sustainability: An emerging economy perspective', *International Journal of Production Economics*, 195(October 2017), pp. 259–272.
- Margolis, J. D. and Walsh, J. R. (2003) 'Misery Loves Rethinking Companies : Social Initiatives', *Administrative Science Quarterly*, 48(2), pp. 268–305. Available at: <http://asq.sagepub.com/content/48/2/268.short>.
- Martin, G. P., Wiseman, R. M. and Gomez-Mejia, L. R. (2019) 'The Interactive Effect of Monitoring and Incentive Alignment on Agency Costs', *Journal of Management*, 45(2), pp. 701–727.
- Martínez-Ferrero, J. and Frías-Aceituno, J. V. (2013) 'Relationship between sustainable development and financial performance: International empirical research', *Business Strategy and the Environment*, 24(1), pp. 20–39. doi: 10.1002/bse.1803.
- Mela, C. F. and Kopalle, P. K. (2002) 'The impact of collinearity on regression analysis: The asymmetric effect of negative and positive correlations', *Applied Economics*, 34(6), pp. 667–677. doi: 10.1080/00036840110058482.
- Mishra, S. and Suar, D. (2010) *Does corporate social responsibility influence firm performance of Indian companies?*, *Journal of Business Ethics*.
- Moskowitz, M. (1972) 'Choosing socially responsible stocks', *Business and society review*, 1(1), pp. 71–75.
- Quere, B., Nouyrigat, G. and Baker, C. R. (2015) *Corporate Responsibility Ratings and Business Performance: A differential analysis by sector for European firms*.
- Refinitiv (2022) 'The Business Classification Model', (January).
- Rose, J., Flak, L. S. and Sæbø, Ø. (2018) 'Stakeholder theory for the E-government context: Framing a value-oriented normative core', *Government Information Quarterly*, 35(3), pp. 362–374.
- Scholtens, B. (2008) 'A note on the interaction between corporate social responsibility and financial performance', *Ecological Economics*, 68(1–2), pp. 46–55.
- Stamolampros, P. and Symitsi, E. (2022) 'Employee treatment, financial leverage, and bankruptcy risk: Evidence from high contact services', *International Journal of Hospitality Management*, 105(June 2021), p. 103268. doi: 10.1016/j.ijhm.2022.103268.
- Tiep Le, T., Ngo, H. Q. and Aureliano-Silva, L. (2021) 'Contribution of corporate social responsibility on SMEs' performance in an emerging market – the mediating roles of brand trust and brand loyalty', *International Journal of Emerging Markets*, ahead-of-p(ahead-of-print). doi: 10.1108/IJOEM-12-2020-1516.
- Vance, S. C. (1975) 'Are socially responsible corporations good investment risks', *Management review*, 64(8), pp. 19–24.
- Vuong, N. B. (2022) 'Borsa _ Istanbul Review Investor sentiment , corporate social responsibility , and financial performance : Evidence from Japanese companies', *Borsa istanbul Review*. doi: 10.1016/j.bir.2022.06.010.
- Waddock, S. A. and Graves, S. B. (1997) 'The corporate social performance–financial performance link', *Strategic management journal*, 18(4), pp. 303–319.
- Wang, Z. and Sarkis, J. (2017) 'Corporate social responsibility governance, outcomes, and financial performance', *Journal of Cleaner Production*, 162, pp. 1607–1616. doi: 10.1016/j.jclepro.2017.06.142.

The Impact of Leadership Style on Employee Wellbeing in Dubai Government Organizations

Amira Kamali

Dubai Government, UAE

Ms_kamali@hotmail.com

Abstract: Leadership is identified as a critical element for the success of an organization. The present study examines the impact of leadership style on employee wellbeing in Dubai government organizations. The review shows that leaders use different leadership styles in order to achieve organizational goals. This research aims to shed light on how leadership style can impact on employee wellbeing. This empirical study used a qualitative approach to collect data from the participants by using semi-structured interviews with ten senior leaders from Dubai government organizations. Drawing from major themes identified in literature, questions were designed to identify impact of leadership style on employee wellbeing in Dubai government organizations. Nvivo software was also used to analyze the data. The results of this study indicate there is a significant relationship between leadership style and the wellbeing of employees. In addition, the results show that transformational leadership is one of the most effective styles, enhancing the quality of employee wellbeing in Dubai government organizations. The results provide support for the positive impact of this leadership style which implies that Dubai government organizations should train their managers to use transformational leadership style in order to enhance employee wellbeing. The results of the research reveal that there is a future plan to focus on developing transformational leadership style in order to improve the wellbeing of employees. In the end, the study concludes with several recommendations, including the need to conduct more studies and research with other countries similar to the United Arab Emirates and government sector institutions in other countries, with the aim of generalizing the achieved results.

Keywords: Leadership styles, Wellbeing, Dubai government, Transformational leadership

1. Introduction

With the rapid economic development that United Arab Emirates (UAE) has witnessed in the past three decades, leadership is becoming increasingly significant to the development and future of organizations (Kamali 2018). Leadership has also become a fundamental topic in most studies and theories over the past few years due to the influential role leaders play in achieving the organization's goals (Antonakis & Day 2017). Studies (Salas-Vallina 2021) have confirmed that organizations may need to be informed of the impact of leadership style on employee wellbeing. Currently, most government organizations in the UAE focus on employee wellbeing, but there are not many details about the extent to which the leadership style used affects this wellbeing (Tafvelin et al. 2011; Nyberg et al. 2015). In the context of the UAE, and particularly in Dubai government organizations, this study addresses the following research question: "What is the impact of leadership style on employee wellbeing in the Dubai government organization?" This research aims to shed light on identifying the leadership styles of leaders and their impact on their employee's wellbeing. The underlying mechanisms and determinants of effective leadership style and its impact on employee wellbeing are critical to understand, as the existing literature tends to focus on leadership style practices, rather than the drivers.

2. Literature Review

Leadership is one of the most important topics in society, because of its significant role in the progress of organizations (Antonakis & Day 2017). Since the late 1940s, leadership research has moved towards an understanding of leadership style (Bass 2008). Leadership style is a variable that has received significant attention in the literature (Avolio and Bass 2004) and can be defined as patterns of emphases, indexed by the intensity of particular leadership behaviour, which a leader places on different leadership situations (Andersen 2008). The common leadership styles that are found in the literature include charismatic, situational, autocratic, democratic, directive, coercive, affiliative, consultative and participative (Bass 2008). Furthermore, a number of studies (Day & Halpin 2004) have recently argued that leadership involves a complex mix of cognitive, behavioural, and social skills that may develop at different rates and involve different learning experiences. According to Avolio and Bass (2004), the best leaders usually use a full range of leadership styles, transformational, transactional and laissez-faire leadership styles, as appropriate to the situation.

2.1 Leadership Styles

2.1.1 Transformational leadership style

The theory of transformational leadership was first presented by Burns in 1978, who recommends that leaders and subordinates connect in a social exchange to attain a desired target. Burns argues that transformational

leaders are people who elevate subordinates and themselves to a higher level of inspiration and morals (Bass 2008). This leadership style encourages subordinates to rise above their self-interest to attain organizational goals beyond stated expectations (Bass 1985). During the 1980s, the new or transformational approach became the main focus in many leadership studies (e.g., Burns 1978; Bass 1985; Bass 1995). For example, Bass (1995) claims that transformational leadership is one of the most popular approaches to leadership. In addition, Bass (1985) describe transformational leaders as those individuals who inspires their followers to achieve unprecedented results and build up their own leadership competencies. Transformational leadership style has five distinctive components: idealized attributes, idealized influence, individualized consideration, inspirational motivation, and intellectual stimulation (Bass 2008).

2.1.2 Transactional leadership style

The theory of transactional leadership recommends that leaders make use of organisational frameworks to inform subordinates about what they have to do and what rewards they will get for following instructions (Bass 1995). The use of rewards in transactional leadership can be efficient, especially in routine conditions, and lead to high performance and follower's satisfaction (Avolio & Bass 2004). The transactional leader performs several tasks: they communicate objectives and expectations of performance, they connect objectives and accomplishments to rewards and observe the performance of followers according to their accomplished objectives, and they take corrective action when required (Smith et al. 2004). These types of leaders reward subordinates who follow instructions and warn people who do not follow instructions. Transactional leadership consists of three elements: contingent reward, active management by exception, and passive management by exception (Bass 1995).

2.1.3 Laissez-faire leadership style

Laissez-faire leaders work with whatever structure is put in place without any criticisms or suggestions (Fiaz et al. 2017). In addition, aims and objectives are established only when it is compulsory and required. A laissez-faire leader avoids communication, avoids making decisions, and avoids getting involved when important issues arise (Avolio & Bass 2004). A laissez-faire leader usually tries to maintain a low profile and not create waves of disturbance (Bass 1985). The laissez-faire leadership style is characterized by delays in actions and absence (Avolio & Bass 2004). When compared to transformational and transactional leadership styles, the laissez-faire leadership style is considered ineffective (Bass, 1995). This type of leader usually gives up on responsibility and lacks confidence in their ability as a leader (Fiaz et al. 2017).

2.2 Employee Wellbeing

Wellbeing studies has progressively become a common topic in scholarly research journals (Liu et al. 2010). There is a vast body of literature across different fields related to wellbeing in the workplace (De Simone 2014). In addition, there is also variation in the definition of wellbeing. In the past, wellbeing has been referred to the absence of disease, hence mostly referring to physical health. However, over time this term has gained a broader meaning which involves the physical, mental, emotional and social aspects (De Simone 2014). In UAE, there is a national strategy for wellbeing 2031 which aims to make the UAE a world leader in quality of life through a number of strategic objectives and different initiatives, highlighting the UAE government's attention on the wellbeing of citizens (World Health Organization 2021). The framework consists of three main levels; individuals, society and the country. The main purpose of the strategy is to enhance wellbeing by encouraging a healthy and active lifestyle. Dubai government organizations are currently working on different initiatives in order to support the National Strategy for Wellbeing 2031. Wellbeing at the workplace is a significant issue that should be considered because employees spend about one-third of their time at workplace, and they usually do not leave their job behind when they leave the workplace (Liu et al. 2010). Employees with poor wellbeing might be less productive, increase absenteeism, and reduced contribution to the organizations (De Simone 2014).

2.3 Impact of Leadership Styles on Employee Wellbeing

Leaders play a focal role in organizations and their behavior and leadership styles have a substantial impact on wellbeing of their employees (e.g., Avolio, Walumbwa, & Weber 2009). Leadership style has been considered as one of the most important factors that can enhance employee wellbeing and it is seen as the live wire for the achievement of organizational vision and goals (Nyberg et al. 2015). A number of previous studies have examined how leadership style impacts on employee wellbeing (Tafvelin et al. 2011; Nyberg et al. 2015). For instance, (Tafvelin et al. 2011) conducted a longitudinal study of 2,700 social service employees of a Swedish municipality over a 12-month period. The study revealed that transformational leadership was significantly and positively related to employee wellbeing. Similar to the diverse definition of leadership, employee wellbeing has

also been widely examined and produced various conceptualizations and measurements of wellbeing (Brunetto et al. 2012). According to Avolio et al. (2009), the wellbeing of employees and leadership styles are closely linked. Previous studies on wellbeing have broadly shown that leadership styles that are relational, charismatic and transformational consistently reveals better employee outcomes in terms of wellbeing (Cummings 2010). Explicitly, transformational leadership has been correlated with less depression, better general health and less stress (Nyberg et al. 2015).

3. Methodology

The study utilized qualitative methodology, using semi-structured interviews with participants from Dubai government organizations. Qualitative research is interested in meaning and in how people make sense of their lives and experiences (Miles & Huberman 1994). To apply qualitative methodology, the researcher visits the participants' sites, and settings to observe and record behaviour in situ (Myers 2010). This enables questions to be clarified for the interviewee and answers to be followed up as appropriate (Miles & Huberman 1994). Furthermore, semi-structured interviews allow for greater breadth and depth of information to be sought, which may reveal the interviewee experience and give access to their ideas and thoughts (Klandermans & Staggenborg 2002). The application of this approach to this study enables a deeper understanding how leadership style impacts on employee wellbeing, and helps to generate insights and answers to the questions related to leadership styles.

3.1 Participants, Interview Guide and Procedures

Data were collected from interviews with ten participants, including Directors and Heads of Sections in five different Dubai government organizations. The participants were all Emirati, and their age ranged from 35 to 55 years old. There were 4 males and 6 females. The researcher ensured that the developed interview protocol addressed the research objectives. According to Myers (2010), an interview protocol lists questions or issues used in the study. The interview protocol consisted of four themes and the research conducted face to face interview in participant's offices. Each interview lasted 30–45 minutes and all interviews were audiotaped for subsequent transcription, as well as to provide more rigour in the study by providing a full record of the interview (Myers 2010).

3.2 Data Analysis Procedure

All interviews were transcribed by the researcher and key themes were classified as suggested by the establish literature. The QSR NVivo 14 software was employed to code data collected during the study. Nvivo is a coding software that aids researchers in analyzing data and provided a good understanding of developing codes lists for the transcript (Weston et al. 2001). According to Miles & Huberman (1994), coding is the process of organizing data by connecting chunks and writing a word that represents a category in the margins.

4. Findings and Discussion

This section provides a detailed discussion of the main themes derived from the data analysis process. This study identified the impact of leadership style on employee wellbeing in Dubai government organizations. The study included the participation of ten participants (6 females and 4 males) who are decision makers working in the public sector in UAE. The level of education of the participants was high: six of them held a master's degree, while four held a doctoral degree. Six of the participants were from the senior leadership category with the remainder from the middle leadership category. The main important ideas that emerged from the interviews are examined in detail in the following section:

4.1 Characteristics of a Successful Leader

This main idea focuses on identifying the characteristics of a successful leader in Dubai government organizations, where the researcher asked the participants about the characteristics of a successful leader for them. Some characteristics of a successful leader that emerged in the interviews are:

- A successful leader is a person who inspires his employees to do the best.
- A successful leader who motivates his employees, who really can lead.
- A successful leader is a person who has the ability to take the initiative and make decision.
- A great leader is a good listener, a good speaker and a decision maker.
- A successful leader is someone who motivates and encourages his employees.
- A successful leader is a good role model and has the ability to influence others.
- A leader should be aware of the strength of his subordinates and identify the areas to be improved.

Other participants mentioned that the Vice-President, Prime Minister and Ruler of Dubai, Sheikh Mohammed bin Rashid Al Maktoum is a successful leader. Most participants agree that a successful leader must possess different leadership skills: effective communication, innovation, creativity, problem-solving, decision-making, and influencing others. The findings support the study conducted by Kamali (2018), in which he emphasized that successful leaders in organizations must have leadership skills that help them achieve the organization's goals. Another participant added that a leader should be able to identify the strength of his followers and be aware of the areas to be improved. Wajdi (2017) asserts that leaders usually have a vision of what can be achieved, and they can communicate it to their subordinates. Therefore, leadership is concerned with developing consistent and goal-oriented teams (Antonakis & Day 2017).

4.2 Defining Leadership Styles

Leadership style can be defined as patterns of emphases, indexed by the intensity of particular leadership behaviour, which a leader places on different leadership situations (Andersen 2008). According to Anderson and Sun, (2017), leadership styles differ from one leader to another as each leader has their own style of influencing subordinates to achieve the goals of the organization. When the participants were asked to answer the following question: "What is your definition of leadership style?", all participants demonstrated their knowledge of the different leadership styles that a leader may use with subordinates. They defined leadership styles as the different behaviours that a leader uses in dealing with subordinates. Some participants also pointed out that there are many different leadership styles, such as democratic, transformational, charismatic, transactional, and situational, as these styles are not fixed and may vary depend on situations. Also, the participants argued that there is no particular leadership style that works in every situation or organisation. This supports Avolio and Bass (2004), who argued that the best leaders usually use a full range of leadership styles, transformational, transactional and laissez-faire leadership styles, as appropriate to the situation. Furthermore, the majority of the participants mentioned that a leader who can show a mixture of leadership styles is more effective in achieving the goals of the organization. The findings indicate that the participants knew how leadership styles are defined and are aware of the different leadership styles. The finding support the study of (Antonakis & Day 2017) who argued that leadership styles are one of the key elements for successful organizations.

4.3 Defining Employee Wellbeing

There are a huge body of literature across different fields related to employee wellbeing at the workplace (De Simone 2014). Also, there is variation in the definition attributed to the term of wellbeing. When the participants were asked to answer the following question: "How do you define employee's wellbeing?" most of the participants referred to overall mental, emotional, physical and health of employees. Another participant argued that employee wellbeing is about being emotionally healthy, dealing with stress, handling stressful situations, and enjoying life at the same time. In addition, one participant added that employees who are emotionally healthy are able to cope with many challenges faced at workplace. Past research shows different variations in the definition of wellbeing (Liu et al. 2010; De Simone 2014). For example, De Simone (2014) mentioned that wellbeing involves the physical, mental, emotional, and social aspects. Moreover, Liu et al. (2010) claimed that the concept of wellbeing is seen as having both psychological and physical qualities. Other participants mentioned different terms used for employee wellbeing such employee happiness, employee satisfaction and employee engagement. One of the participants declared that when an employee is in a state of wellbeing at workplace, they can be more creative, productive and better able to cope with stress. Also, one participant said that the employee wellbeing is the most valuable asset and must be a priority for Human Resources departments. This supports the findings of Guest (2017) who suggest that Human Resources Management should give priority to develop different practices and approaches to enhance employee wellbeing.

4.4 The Impact of Leadership Style on Employee Wellbeing

Various studies have investigated the impact of leadership styles on employee's wellbeing (Tafvelin et al. 2011; Brunetto et al. 2012). Leaders play a crucial role in organizations and their leadership styles have a significant impact on employee's wellbeing (Avolio et al. 2009). When the participants were asked to answer the following question: "How does leadership style impact on employee wellbeing?" the majority of the participants argued that it has a major impact on the wellbeing of the employees. For example, one of the participants mentioned that "when you spot employees who are actively engaged and work happily and more productively, you should know that they have a great leader who encourages employees and takes care of their wellbeing". Also, another participant said: "We need more transformational leadership in Dubai government organizations, a leader who

has the ability to inspire and motivate others.” According to a joint study conducted by Pierce and Newstrom (2011), working with a transformational leader is very enjoyable and full of passion and energy. It was confirmed by Bass (2008) that the transformational leadership style tends to be more effective compared to other leadership styles. Kamali (2018) added that there are many examples of transformational leaders, including Sheikh Mohammed bin Rashid Al Maktoum (Vice President and Prime Minister of the UAE and Ruler of the Emirate of Dubai), Mahatma Gandhi, and Nelson Mandela, as each of these leaders had the ability to motivate and inspire others. It is necessary to pay attention to the different leadership styles of leaders, as they have a major role in achieving an organization’s goals (Antonakis & Day 2017). There is some evidence that transformational leadership can have a significant impact on wellbeing (Tafvelin et al. 2011). Furthermore, another participant revealed about the national strategy for wellbeing 2031 which aims to make the UAE a world leader in quality of life. They highlighted the UAE government is paying attention to the wellbeing of citizens in order to enhance their wellbeing. Another participant added “Although, there are a number of initiatives related to wellbeing in Dubai government organizations, some employees are still unhappy if they are dealing with autocratic leader”. Lastly, one participant stated that “I think we need to create a culture of wellbeing in every organization”. Those leaders who are passionate about creating a happier and healthier environment at workplace can also help to improve employee wellbeing. The findings demonstrate consistent benefits of transformational leadership on wellbeing, a range of studies (Antonakis & Day 2017) have examined whether these styles can be developed in leaders and the benefits that may result.

5. Conclusions

In spite of the robust global research interest in the role of leadership style in organizations, there is not enough research looking at how different leadership styles impact on employee wellbeing, especially within Dubai government organizations. The results confirm the importance of the leadership styles which had significant positive impact on employee wellbeing in Dubai government organizations. The study focuses on different themes that emerged during interviews with senior leaders in Dubai government organizations, including different leadership styles and various definitions of employee wellbeing, and the impact of leadership style on the wellbeing of employees. In addition, the study shows consistent benefits in terms of reduced stress and better wellbeing for leadership styles that are more relational such as transformational leadership. Yet, the findings demonstrate poorer outcomes for autocratic leadership. The results recommend that employees will benefit more with transformational leadership where employees feel more comfortable with their leaders.

5.1 Limitations and Future Research Implications

The study is a preliminary study into leadership style and the impact on employee wellbeing in Dubai government organizations. Given the scope of the study, it would be difficult to test the relationship between leadership style and employee wellbeing. Still, the initial results offer themselves for further research to provide a more detailed and fine-grained analysis, using, for instance, quantitative methods. In terms of methodology, the sample responses were from Dubai government organizations only, and, therefore, generalizability is limiting. The study can be replicated using different samples, for example by using a sample of the other employees in the private sector, this would be an interesting area for future research. Understanding the impact of leadership style on employee wellbeing in Dubai government organizations is critically important, particularly given that transformational leadership showed consistent benefits to employees in terms of wellbeing. However, this area has, so far, received relatively little research attention, particularly with regard to high context cultures, such as in the UAE. Also, a major recommendation that research should be extended beyond merely examining the leadership styles of leaders and begin to focus on employee perceptions and how leadership styles impact on their wellbeing. Lastly, Human Resources managers should be aware of the type of leadership styles that positively impact on employee wellbeing. They should also adjust the strategies and organizational policies to come up with different initiatives and programs to enhance the employee wellbeing.

References

- Anderson, M.H. and Sun, P.Y., (2017). Reviewing leadership styles: Overlaps and the need for a new ‘full-range’ theory. *International Journal of Management Reviews*, 19(1), pp.76-96.
- Andersen, J. A. (2008), Style theories In A. Marturano & J. Gosling (Eds.), *Leadership: The Key Concepts*, Routledge, New York.
- Avolio, B.J., Walumbwa, F.O. and Weber, T.J., (2009). Leadership: Current theories, research, and future directions. *Annual review of psychology*, 60, pp.421-449.
- Antonakis, J. and Day, D.V. eds., (2017). *The nature of leadership*. Sage publications.
- Avolio, B.J. and Bass, B.M. (2004), *Multifactor Leadership Questionnaire Manual 3rd edition*. Mind Garden, California.

- Bass, B.M. and Bass Bernard, M., (1985). Leadership and performance beyond expectations.
- Bass, B.M., (1995). Theory of transformational leadership redux. *The leadership quarterly*, 6(4), pp.463-478.
- Bass, B. M. (2008), *The Bass handbook of leadership: Theory, research and managerial applications*, 4th ed., Free Press, New York.
- Burns, J.M. (1978), *Leadership*, Harper and Row, New York.
- Brunetto, Y., Teo, S.T., Shacklock, K. and Farr-Wharton, R., (2012). Emotional intelligence, job satisfaction, well-being and engagement: explaining organisational commitment and turnover intentions in policing. *Human Resource Management Journal*, 22(4), pp.428-441.
- Cummings, G.G., MacGregor, T., Davey, M., Lee, H., Wong, C.A., Lo, E., Muise, M. and Stafford, E., (2010). Leadership styles and outcome patterns for the nursing workforce and work environment: a systematic review. *International journal of nursing studies*, 47(3), pp.363-385.
- Day, D.V. and Halpin, S.M., (2004). Growing leaders for tomorrow: An introduction. *Leader development for transforming organizations: Growing leaders for tomorrow*, pp.3-22.
- De Simone, S., (2014). Conceptualizing wellbeing in the workplace. *International journal of business and social science*, 5 (12).
- Fiaz, M., Su, Q., Ikram, A. and Saqib, A., (2017). LEADERSHIP STYLES AND EMPLOYEES' MOTIVATION: PERSPECTIVE FROM AN EMERGING ECONOMY. *The Journal of Developing Areas*, 51(4), pp.143-156.
- Guest, D.E., (2017). Human resource management and employee wellbeing: Towards a new analytic framework. *Human resource management journal*, 27(1), pp.22-38.
- Kamali, A., (2018). *Leadership Development Programs: Factors Impacting on Learning Transfer in Dubai Government Organizations* (Doctoral dissertation, Doctorate Thesis]. University of Wollongong in Dubai).
- Klandermans, B. and Staggenborg, S. eds., (2002). *Methods of social movement research* (Vol. 16). U of Minnesota Press.
- Liu, J., Siu, O.L. and Shi, K., (2010). Transformational leadership and employee well-being: The mediating role of trust in the leader and self-efficacy. *Applied Psychology*, 59(3), pp.454-479.
- Myers, M.D. (2010), *Qualitative research in business and management*. Sage.
- Miles, M.B. and Huberman, A.M., (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- National Strategy for Wellbeing 2031 | The Official Portal of the UAE Government
- Nyberg, A., Leineweber, C. and Magnusson Hanson, L., (2015). Gender differences in psychosocial work factors, work–personal life interface, and wellbeing among Swedish managers and non-managers. *International archives of occupational and environmental health*, 88, pp.1149-1164.
- Pierce, J.L. and Newstrom, J.W., (2011). Leaders and the leadership process: Readings. *Self-Assessments and Applications* (6th ed.) New York, NY: McGraw-Hill.
- Salas-Vallina, A., Alegre, J. and López-Cabrales, Á., (2021). The challenge of increasing employees' well-being and performance: How human resource management practices and engaging leadership work together toward reaching this goal. *Human Resource Management*, 60(3), pp.333-347.
- Smith, B.N., Montagno, R.V. and Kuzmenko, T.N., (2004). Transformational and servant leadership: Content and contextual comparisons. *Journal of Leadership & Organizational Studies*, 10(4), pp.80-91.
- Tafvelin, S., Armelius, K. and Westerberg, K., (2011). Toward understanding the direct and indirect effects of transformational leadership on well-being: A longitudinal study. *Journal of Leadership & Organizational Studies*, 18(4), pp.480-492.
- World Health Organization, (2021). Towards developing WHO's agenda on wellbeing.
- Weston, C., Gandell, T., Beauchamp, J., McAlpine, L., Wiseman, C. and Beauchamp, C., (2001). Analyzing interview data: The development and evolution of a coding system. *Qualitative sociology*, 24, pp.381-400.
- Wajdi, B.N., (2017). The differences between management and leadership. *Sinergi: Jurnal Ilmiah Ilmu Manajemen*, 7(1).

Mapping Military Leadership Competencies: A Systematic Literature Review

Felisberto Kiluange Fragoso da Costa^{1, 2} and José Carlos Dias Rouco³

¹Instituto Superior Técnico Militar, Luanda, Angola

²CeiED – Universidade Lusófona, Lisboa, Portugal

³Universidade Lusófona, Lisboa, Portugal

f.kiluangefragoso@gmail.com

p5540@ulusofona.pt

Abstract: Leadership is a complex, dynamic phenomenon, shaped by the characteristics of the different actors involved and the relationships between them, making it a controversial and polysemic concept in the literature. In the military context, it has very specific characteristics that distinguish it and make it more demanding. For the Angolan Armed Forces (FAA), several reforms are underway, fundamentally in the field of staff training, in order to improve their performance in the exercise of their functions. The present study was driven by the following guiding question: “what military leadership competencies are described in the selected literature to be taken as a reference to the education and training of Angolan sub-officers?” For this, a systematic literature review on leadership competencies in the military context was conducted based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) method, divided into three phases: identification, screening, and inclusion. Studies were consulted on Scopus, Science Direct, SciELO and in the Open Access Scientific Repository of Portugal (RCAAP), published between January 2018 and April 2023, according to the selected inclusion and exclusion criteria. The evidences of this study highlights that military leadership competencies mobilise, integrate and transfer a range of knowledge, resources, skills and values that systematically operate to solving the problems of the military professional context, and points to three different approaches to military leadership competencies, that configure three models.

Keywords: Leadership, Military leadership, Military leadership competencies, Approaches to military leadership competencies, Systematic literature review, PRISMA

1. Introduction

Leadership is a social need, generally viewed as directly related to the leader's influence on his followers, with a view to achieve a shared vision through a communication process (Toumbeva *et al.*, 2021). Thus, leadership presupposes an ethical and responsible posture of the leader for the achievement of results (Gonçalves, 2021). In the literature, there is a lack of consensus on the definition of the phenomenon of leadership, since there are many definitions, as well as many authors who study it and give it different approaches (Bass and Stogdill, 1990). Meanwhile, many studies have been published on the phenomenon, criticizing the traditional and conservative focus of the ‘myth of the great man’, focusing on the individual and proposing new categories of analysis (Calvosa and Ferreira, 2023; Henderikx and Stoffers, 2022).

According to Souza and Wood Jr (2022);

the notion of the leader's identity seems incapable of dealing with the growing complexity inside and outside organizations, leading theorists and professionals to seek alternative lenses [...] that consider the relational aspects of leadership, which depend less on the figure of the leader and more on the context and relationships between individuals, as a process co-created in social relationships.

These same authors argue that leadership studies are conducted according to three theoretical lenses, namely: focus on the leader (me), focus on the followers (them) and focus on the collective (us) and they organize leadership theories on this basis (Souza and Wood Jr, 2022). From this perspective, it is possible to analyse leadership from a micro level (such as individual characteristics) to a macro level focused on the collective processes and results of leadership.

In the military context, in addition to the afore-mentioned characteristics, leadership takes on new elements, specific to the context, such as: high complexity, the high level of stress, constant changing environment, with emphasis on crisis contexts (Metwally and Ruiz-Palomino, 2022), extreme violence and constant risk of life, with serious consequences on the psycho-emotional and physical health of the military (Trachik *et al.*, 2020), putting the commander and subordinates in interaction, through a communication process (Tchivela, 2020), for the fulfilment of the mission (Mandele, 2019). Thus, the characteristics of the leaders and the followers, as well as the context make leadership assume different styles (Sakato, 2021).

The FAA is conducting internal reforms, mainly in the field of infrastructure, equipment and staff training. The latter is our focus of interest, in order to improve their performance in the exercise of their functions. Thus, the present study was driven by the following guiding question: “what military leadership competencies do Officers of the FAA need in order to achieve high levels of performance in the exercise of their functions?” This question is fragmented into the following objectives:

- To define leadership competencies in the military context, based on the selected literature,
- To characterize different approaches to leadership competencies in the military context and,
- To identify military leadership competencies in the selected literature.

A search for systematic literature reviews in the international prospective register of systematic reviews (PROSPERO) and COCHRANE databases reveal the absence of records within the scope of the present review. The search through the RCAAP, SciELO, Science Direct and Scopus databases also revealed the scarcity of systematic reviews that answer the starting question of this review. Accordingly, we found this work original and necessary due to its relevance, the period of time covered, and also for contributing to the construction of the theoretical body to support the ongoing doctoral research, allowing an overview of the problem that would not be possible through individual studies, as well as enabling the identification of the need for future research (Page *et al.*, 2021). This way, it seems is essential to enable political and military decision-makers to take the results of this review into consideration within the framework of defence and security policies.

2. Methodology

2.1 Study Design

In order to achieve the objectives formulated and thus answer the starting question we made a systematic literature review, of qualitative analysis, based on the PRISMA method, divided into three phases: identification, screening and inclusion of studies (Page *et al.*, 2021; Vilelas, 2020; Shamseer *et al.*, 2015). Thus, documents published between January 2018 and April 2023 were consulted in the databases Repository of Open Access Science of Portugal (RCAAP – Acronym in Portuguese), Scientific Electronic Library Online (SciELO), Science Direct and Scopus. The research and analysis was carried out between March and October 2023.

2.2 Selection Criteria

To guide and limit the search, we defined inclusion and exclusion criteria, as in Table 1.

Table 1: Selection criteria

Inclusion criteria	Exclusion criteria
Type of documents: Articles, theses, dissertations, book chapters and communications at conferences with blind peer review. Time of publications: published between January 2018 and April 2023. Languages: Portuguese, Spanish, English and French. Subjects: Social Sciences, Psychology, Decision Sciences, Neurosciences, Business, Management and Accounting and Arts and Humanities.	Protocols, duplicate documents, Studies with unavailable full texts or in languages other than those selected for inclusion, or with a different focus.

Source: Research data

2.3 Search Strategy

We applied different search strategies by database, accordingly with their characteristics, as in Table 2.

Table 2: Search strategies by database

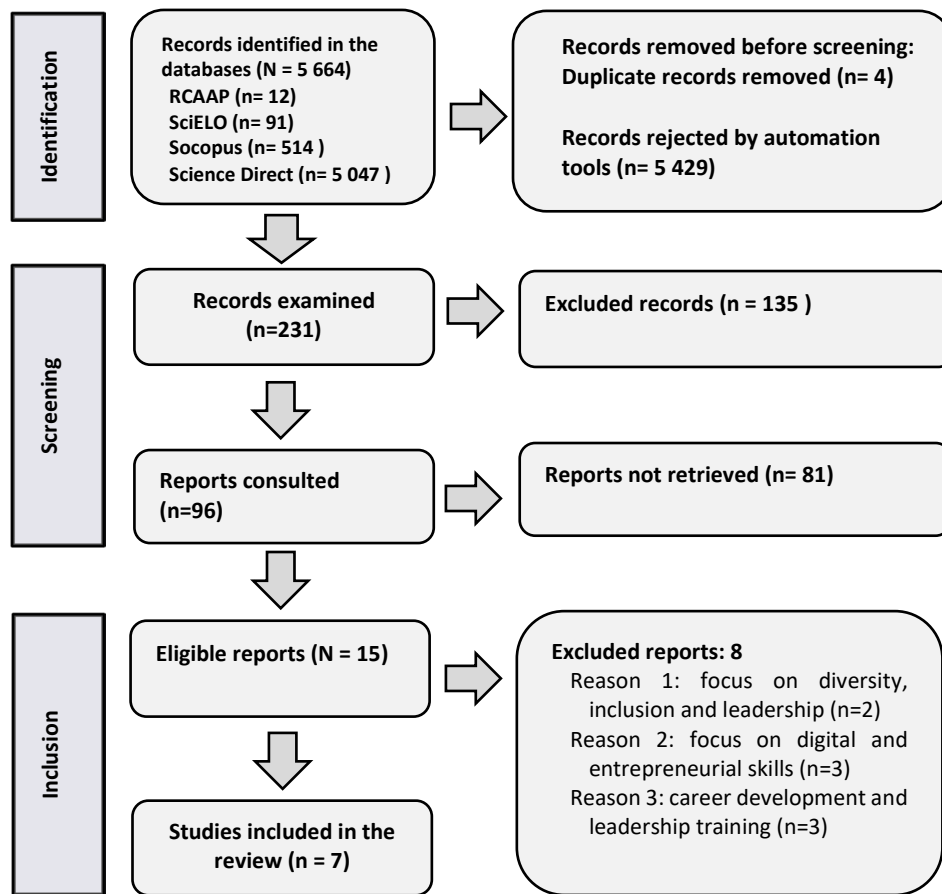
Nº	Databases	Search strategy
1	RCAAP	“Military leadership competencies” AND “2018-2023” AND “books” AND “conference papers” AND “PhD Theses” AND “articles” AND “Master’s Dissertations” AND “Portuguese” AND “English” AND “Spanish” AND “French”.
2	SciELO	“Military leadership competencies” AND “January 2018 to April 2023” AND “Portuguese” AND “French”.
3	Science Direct	“Military leadership competencies” OR “military leadership skills” AND “2018-2023” AND “articles” (review and research) AND “book chapters” AND “Social Sciences” AND “Business, Management and Accounting” AND “Decision Sciences” AND “Psychology” AND “Open access and archive”.

4	Scopus	"Military leadership competencies" OR "military leadership skills" AND "2018-2023" AND "Social Sciences" AND "Business, Management and Accounting" AND "Arts and Humanities" AND "Psychology" AND "Decision Sciences" AND "Neurosciences" AND "articles" AND "book chapters" AND "conference or review articles" AND "final stage of publication" AND "Portuguese" AND "English".
5	PROSPERO	"Military leadership competencies" AND "Revision" AND "2018-2023".
6	OSF	"Military leadership competencies" AND "Revision" AND "2018-2023"

Source: Research data

3. Results

The process of identification, screening and inclusion of studies can be best observed in the PRISMA flow chart below (Figure 1). And, the studies included for the review are presented below in Table 3.



Source: Research data.

Figure 1: PRISMA flowchart regarding the selection of studies

The search in RCAAP and then in SciELO brought up the term military leadership skills, in addition to military leadership competencies, as previously defined, which led us to adopt this descriptor in the searches in the following databases (Science Direct and Scopus). Research data point to the scarcity of literature review studies on the guiding question of this research, and particularly in the context of the Angolan Armed Forces (FAA).

The review produced evidence that highlights interesting studies published in the context of the Armed Forces of Portugal, Mozambique, Brazil, Norway, Finland and the USA, in addition to Sweden, Indonesia, South Africa, Canada and the United Kingdom whose studies were excluded for the reasons already mentioned.

The research illustrates the broad interest and production in this area of study by Psychological Sciences (Boe and Torgersen, 2018), Management Sciences (Häyrynen and Läms, 2021; Neves, 2022), Military Sciences (Montez, 2021; Neves, 2022), Political Sciences (Arnold, Chatagnier and Hollibaugh, 2020), Social Sciences (Reis

and Zucco, 2020) and Education Sciences (Muirequetule and Machado, 2018) emphasizing different aspects from leadership competencies in the military context.

Table 3: Studies included for qualitative analysis

Nº	Author (Date)	Country	Sample	Study design	Main results and conclusions	Disciplinary area
1	(Muirequetule and Machado, 2018)	Mozambique	10 military leaders, 18 AMMSM graduates	Transversal. Qualitative (focus group) and document analysis.	Need for greater articulation between the initial training plan and the professional exercise plan, since the finalists of the Mareschal Samora Machel Military Academy (AMMSM) have difficulty in developing command and leadership skills. They only develop them in the performance of their duties.	Education Sciences
2	(Boe and Torgersen, 2018)	Norway	4 high level leaders and 10 low level leaders	Cross-sectional. Qualitative. Semi-structured interviews and document analysis.	Lack of a general understanding of strategic leadership competencies (SLC); Need to improve SLC in order to develop consequent actions for its development.	Psychology
3	(Arnold, Chatagnier and Hollibaugh, 2020)	USA	Not observed	Biographical study (100 commanders) and doc. analysis of 250 battles of the American Civil War	Focusing on the relationship between military appointments and battlefield outcomes allows direct examination of the relationship between appointee characteristics and organisational performance (...) with implications for the study of conflict and bureaucratic politics.	Political Science
4	(Reis and Zucco, 2020)	Brazil	3 Female Officers, Directors of Military Org.	Biographical study	The interviewees' leadership highlighted their characteristics, developed throughout their lives and enhanced (or acquired) in the exercise of command.	Social Sciences
5	(Montez, 2021)	Portugal	265 participants: 117 Cadets and 148 Lieutenants	Longitudinal. Quantitative methods. Competencies survey	The more academic and professional skills, the more the cadets reveal greater self-confidence in performing their tasks on the path to excellence, which is fundamental in performing their duties as future commanders.	Military Sciences
6	(Häyrynen and Lämsä, 2021)	Finland	15 Female Officers	Longitudinal. Qualitative, through interviews with participants in a training programme, carried out at 3 moments.	The current leadership model for effective leadership in the Finnish Defence Forces (FDF) would benefit especially from the addition of an intrapersonal leadership competence dimension, to better take women's needs into consideration. By making the female point of view visible and acknowledging women's views, new resources can be created for military organizations.	Human Resource Management
7	(Neves, 2022)	Portugal	370 military personnel	Cross-sectional. Quantitative	The importance of orientation towards the development of harmonious and collaborative relationships, towards the process inherent in the leader him/herself, with emphasis on the ability to make decisions in a fair, ethical manner and correspond to the commitments made.	Business Sciences

Source: Own elaboration of the research data.

The data also points to the authors' emphasis on qualitative methodologies for the study of leadership competencies, with a strong preference for documentary analysis, focus groups and biographical studies.

Among the results, the tendency for cadets not to develop the expected leadership competencies is emphasised, if not in the performance of their functions, once they have been assigned to a post (Muirequitule and Machado, 2018).

Of the studies on leadership in the military context, two perspectives stand out: the one that associates military leadership with military command (Muirequitule and Machado, 2018) and the one that associates it with management, understanding the military leader as a manager of himself, his collaborators and the task (Neves, 2022).

Although the evidence from our study shows a tendency for studies to consider military leadership as a hierarchical, unidirectional process, centred on the figure of the commander-leader who exercises vertical authority over subordinates (Command, Control and Communication), contrary to the current trend of collective leadership (Souza and Wood Jr, 2023), the analysis of the military leadership competencies models point to a tendency to adopt more participatory leadership practices committed to involving all the players in the decision-making process (Montez, 2021; Häyrynen and Läms, 2021; Neves, 2022).

Of the seven studies included for the review, only three presented more rigorous data to answer the starting question, even presenting models of military leadership competencies that can be adapted to different professional contexts, with the necessary precautions. The same models seem to emphasise what were considered, at least from the researchers' perspective, to be needs for change in their military professional contexts. Moreover, the differences in the prevalence of answers to the items denotes the degree of importance that participants assigned to them in their answers (See Tables 4, 5 and 6).

Table 4: Military leadership competencies for the Portuguese Army

TYPOLOGY OF COMPETENCES			
Personal/Cognitive	Social	Functional	Organisational
DOMAIN OF MILITARY LEADERSHIP COMPETENCIES			
Of oneself	Of relationships with others	Of work, activities and tasks	Of management
Courage	Participative leadership	Decision-making	Vision
Self-confidence	Interpersonal relationships	Ability to solve problems	Conflict management
Self-control	Leadership by delegation	Technical and professional aptitude	Task orientation
Flexibility and adaptability	Influence by example		
Determination and perseverance	Openness to multiculturalism		
Optimism and enthusiasm	Empathy		
Consideration	Recognition, positive feedback and appreciation		
Transparency	Communication		
Proactivity	Assertiveness		
	Team work		
	Developing others		
	Orientation towards human relations		

Source: Montez (2021).

Häyrynen and Läms (2021), proposed the model of military leadership competencies and corresponding sub-competencies (Table 5) that address the specificity of the military profession, in the Finnish Armed Forces.

Table 5: Military leadership competencies for the Finnish Armed Forces.

Core competency category	Sub-competencies
Intrapersonal competence	Self-esteem
	Self-confidence
	Own leadership style
Emotional intelligence competence	Taking others into account
	Self-expression
	Patience
	Self-awareness
Social competence	Relationship skills
	Coping with and learning from diversity
	Motivating others
	Organizational skills
	Sense of proportion
Pedagogical competence	General training and teaching skill
	Presentation skills
	Directing others
Technical competence	Professional skills

Source: Häyrynen and Läms (2021).

More recently, another model of military leadership competencies was proposed for the Portuguese Armed Forces (Table 6).

Table 6: Military leadership competencies for the Portuguese Armed Forces

Leading Organization (LORG)	Leading Others (LOTH)	Leading Yourself (LYOUR)
Sound judgement	Forging synergy	Credibility
Influencing leadership	Inspiring commitment	Resiliency
Getting information, Making sense of it; Problem identification	Leading employees	Coping with pressure and adversity; Integrity
Results orientation	Employee development	Composure
Change management	Building collaborative relationships	Self-awareness
Strategic planning	Respect for differences	Balancing personal life & work
Administrative/Organizational ability	Engaged management	Leadership stature
Being a quick learner	Confronting problem employees	Adaptability
Risk-taking, Innovation	Managing conflict; Negotiation	Seeks opportunities to learn
Human resources	Developing & empowering	Learning through others
Strategic perspective	Compassion & sensitivity	Taking initiative
Acting systemically	Participative management	Energy, Drive, Ambition

Source: Neves (2022).

4. Discussion

4.1 Definition of Leadership Competencies in the Military Context

The literature suggests that leadership is a psychosocial phenomenon, which develops in different ways according to the sociocultural contexts (Kawano, 2019). In this way, as a co-creation phenomenon, leaders and followers imprint their own characteristics on this phenomenon, in their process of socio-professional interaction, causing it to acquire its own characteristics and style (Sakato, 2021).

It is noted that while leadership in a business context aims at profit maximization, in a military context leadership aims at successful mission accomplishment, which has implications for social and political stability (Rehardiningtyas, Firdaus and Sulistyanto, 2022). According to (Arnold, Chatagnier and Hollibaugh, 2020), in military operations successful mission accomplishment mainly implies victory and as few casualties as possible. In fact "historians and military strategists have long recognized the critical role of leadership in determining battlefield outcomes" (Arnold, Chatagnier and Hollibaugh, 2020, p.194).

According to the data, military leadership consists of the ability to influence and guide followers (collaborators) to perform tasks in order to accomplish the assigned mission. However, military leadership fulfils several functions. Among them we highlight: influence, direct guide, command and enforce military dictates (Muirequetule and Machado, 2018). In military leadership, the element of influence stands out due to the professional culture of loyalty, discipline and hierarchy (Rehardiningtyas, Firdaus and Sulistyanto, 2022).

Being the expression of legal authority, military leadership is exercised in accordance with authority and power delegated by law to a commander to influence, coordinate and control the forces and means at his disposal (Muirequetule and Machado, 2018). Military leadership, according to this author, citing Rouco (2012) is only one part of military command, since "military command at all levels is the art of making decisions, leading, motivating, directing and controlling military forces in the accomplishment of missions". Thus, in a military context, the action of leading and the action of commanding seem deeply interconnected and interdependent.

The evidence seems to indicate a diversity of interpretations about authors conceptions of how military leadership manifests itself. For some of them it is manifested through skills or ability (Reis and Zucco, 2020; Häyrynen and Läms, 2021), giving rise to the keywords "military leadership skills". For other authors, leadership is expressed through competencies (Muirequetule and Machado, 2018; Montez, 2021; Neves, 2022) giving rise to the term "military leadership competencies". There are still some who had seen it as proficiency, from where the term military leadership proficiency comes from (Boe, 2015).

Based on the notion of skill, some authors argue that military leadership is expressed through certain skills. In this sense, they understand military leadership skills, as the ability to exercise power to influence, guide and motivate their followers, according to a task (Reis and Zucco, 2020; Gonçalves, 2021; Häyrynen and Läms, 2021).

Others authors understand military leadership from the concept of competency. Thus, according to Neves, (2022) competence translates the operationalization of knowledge, skills and values mobilized to solve problems. According to the same author, the understanding of this concept has evolved since its introduction in the business environment by), as an aptitude to accomplish tasks (McClelland, 1973). In view of globalization, the growth of competitiveness among organizations and the need for qualified labour, assumed as human resources gives rise to the model of human resource management based on competencies (Neves, 2022). Accordingly, the author agrees with Özçelik and Ferman (2006), that these soon were combined to the results obtained by the professionals, giving rise to the performance management model based on the definition of competencies. Thus, competencies are defined to raise the professionals' performance levels.

Competencies are the expression of the modes of professional performance, in a given context. Thus, it assumes three perspectives of analysis: competencies of the person (micro level), competencies of the collective (meso level) and competencies of the organisation (macro level), as pointed by Cunha and Rego (2012).

Based on this notion of professional contexts, military leadership starts from the personal competencies developed and complemented with those worked on during military training and professional experience in the performance of functions (Reis and Zucco, 2020; Häyrynen and Läms, 2021).

Rehardiningtyas, Firdaus and Sulistyanto (2022) understand competence as an individual's ability to solve a problem, through a combination of knowledge, skills and abilities. Accordingly, these competencies are widely used and integrated in all management functions such as planning, policy making, implementation and monitoring. From this point of view, they argue that military leadership should follow the same model. However, in the military context, there is still much dispersion in the perception of military leadership competencies, as argued by Boe and Torgersen (2018).

The perspective of Neves (2020) agrees with Fleury and Fleury (2001, p.187) who define competence as,

set of social and communicational learning processes nurtured upstream by learning and training and downstream by the assessment system. [...] it is knowing how to act responsibly and that is recognised by others. It involves knowing how to mobilise, integrate and transfer knowledge, resources and skills in a specific professional context. They are always contextualised

Military Leadership competencies mobilise, integrate and transfer a range of knowledge, resources, skills and values that systematically operate to solving the problems of the military professional context (Neves, 2022; Montez, 2021).

Others see military leadership from the concept of proficiency. Thus, they argue that leadership proficiency derives from personal proficiency, social proficiency and subject matter proficiency, understood as the military subject matter and which results in the Officer's competency (Boe, 2015). However, it seems that proficiency has more to do with the degree of excellence with which a task is performed than with the ability or competence to carry it out.

In our point of view, the term competency seems more appropriate to describe military leadership since it can easily be operationalised to meet the needs of military education in the academic, ethical, physical and military training dimensions. As Muirequetule and Machado (2018) argue, military leadership competencies do not appear, they are not formed automatically. They are developed through hard work of education and training.

4.2 Approaches to leadership Competencies in the Military Context

Unlike other professional contexts where leadership is more flexible, in military contexts it tends towards ascension and specialisation, within the framework of the development of specific careers and functions (Rehardiningtyas, Firdaus and Sulistyanto, 2022), from a tactical to strategic levels.

The consideration of the meaning of the term leadership competencies in the military context is of paramount importance if we aim to contribute to the Armed Forces Officers achieving high levels of professional performance. It is imperative that the study of leadership competencies in the military context be deepened by considering the models for managing leadership competencies in the military context, starting with the identification of each model item and its meanings and performance criteria. The models raised in the present literature review (Montez, 2021; Häyrynen and Läms, 2021; Neves, 2022), allow us to broaden the understanding of the subject and to analyse its definition and main characteristics of the same competencies.

The evidence from our study points to three different approaches to leadership competencies in a military context, that configure three models, namely:

- Montez's (2021) approach to military leadership competencies, whose elements of analysis are: personal or cognitive competencies, social competencies, functional competencies and organisational competencies, based on the management model of military leadership competencies proposed by (Rouco, 2012) – Table 4;
- The approach to core military leadership competencies and their sub-competencies, proposed by Häyrynen and Läms (2021) – Table 5;
- The approach to military leadership competencies, proposed by (Neves, 2022), according to the model of the Centre for Creative Leadership (CCL), in three domains: Leading Organisation, Leading Others and Leading Yourself – Table 6.

The approach to military leadership skills in these three studies is shaped by the authors' training perspective. For example, Montez (2021) in Portugal, from the perspective of the military sciences, emphasises that the more academic and professional skills cadets have, the better they will perform their command duties as sub-officers. Thus, military leadership competencies serve military command. On the other hand, Häyrynen and Läms (2021), from the perspective of Human Resources Management, emphasise the need to take the female staff officers in the Finnish Armed Forces perceptions and add an intrapersonal leadership competence dimension, to better take women's needs into account when designing military leadership models for the same forces. Its emphasis is on personnel management and, more specifically, military career development. Finally, Neves (2022), from the perspective of economic and management sciences, emphasises the need to train cadets to be able to develop harmonious and collaborative relationships in order to lead themselves, others and the organisation. It thus emphasises the figure of the military leader as a manager. However, Neves (2022) seems to ignore the institutional nature of the Armed Forces and that although some management concepts cannot be applied to it, as military leadership has very specific characteristics to the military context, as we have already pointed out, and which distinguish it from leadership in an organisational (business) context.

4.3 Military Leadership Competencies in the Angolan Armed Forces

As the research data indicates, while on the one hand much has been produced and published on military leadership and military leadership competencies at a worldwide level, at a local level, in the Angolan Armed Forces, there are few studies on the phenomenon. However, the evidence suggests that, in a certain sense,

leadership competencies in a military context are defined as the expression of the expectations of the military institution on its personnel, in the confrontation with the training needs identified in each context, giving rise to new designs of military leadership competencies, according to each historical moment, from a more participative perspective between theoreticians and professionals. For example, technological progress, with an emphasis on artificial intelligence and its application in military operations, has raised challenges for the analysis and design of military leadership competencies (Boe and Torgersen, 2018).

While the civilian context looks at professionals as human resources, as human capital, at the service of the capitalisation of the organisations' profits, in the military context, troops are seen as personnel and as a primary and indispensable element for the success of the Armed Forces (Neves, 2022; Ferreira and Nunes, 2021).

The evidence allows us to assert that for the development of competencies, it becomes essential to describe, from the course curriculum, the competencies that are expected to be developed, as the expression of what the trainees will be able to do at the end of that training (Costa, 2023). In this way, the curricular design itself, at the level of the professional's performance model, should describe the competencies that the finalist should show, as a system of knowledge, articulated with the skills and values that they should mobilise to solve the problems of their profession, in the performance of their functions (Costa, 2022).

5. Conclusion

Leadership competencies in a military context consist of the mobilisation of accumulated knowledge, skills, experience and values for the resolution of problems in the military profession. They aim to raise professional performance so that it is successful in any scenario. In this sense, their definition and characterisation, based on a model that integrates the intentions of the Armed Forces' staff and personnel bodies, is of paramount importance to guide their development, in a conscious manner, either through self-directed or institutionally coordinated actions.

In future studies it would be interesting to move on to empirical work, in order to deepen the understanding of the original question. It would also be extremely valuable to study how leadership competencies are developed in a military context, as well as to define the levels of performance that respond to military leadership competences.

Knowledge of leadership competencies in a military context can be used by students to guide their training at the Military Academies. They can also be used by political and military decision-makers to develop the Armed Forces' personnel management processes and to guide the curricular design and the development of military courses.

This study has limitations regarding the time in which the review took place, the lack of access to some studies that would enrich the review but were not in open access, while others were in other languages, as well as the bases selected.

As this is a qualitative study, it is advisable to take the evidence into account with due caution. On the other hand, the difficulty in retrieving some studies ended up affecting the results, which could be more robust. Added to this are the limitations of the review process, which was conducted manually.

References

- Arnold, J.B., Chatagnier, J.T. and Hollibaugh, G.E., Jr (2020) 'Allegiance, Ability, and Achievement in the American Civil War: Commander Traits and Battlefield Military Effectiveness', *International Studies Quarterly*, 64(1), pp. 194–206. Available at: <https://doi.org/10.1093/isq/sqz087>.
- Bass, B.M. and Stogdill, R.M. (1990) *Bass & Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications*. 3rd Ed. Simon and Schuster.
- Boe, O. (2015) 'Developing Leadership Skills in Norwegian Military Officers: Leadership Proficiencies Contributing to Character Development and Officer Competency', *Procedia - Social and Behavioral Sciences*, 186, pp. 288–292. Available at: <https://doi.org/10.1016/j.sbspro.2015.04.017>.
- Boe, O. and Torgersen, G.-E. (2018) 'Norwegian "Digital Border Defense" and Competence for the Unforeseen: A Grounded Theory Approach', *Frontiers in Psychology*, 9. Available at: <https://doi.org/10.3389/fpsyg.2018.00555>.
- Calvosa, M.V.D. and Ferreira, M. (2023) 'Liderança: Representações sociais e modelos mentais dos séculos XX e XXI', *READ*, 29(1), pp. 224–260. Available at: <https://doi.org/10.1590/1413-2311.377.125771>.
- Costa, F.K.F. da (2022) 'Currículo: Perspectivas de análise para um conceito polisémico y polémico en la formación de Oficiales de las Fuerzas Armadas Angoleñas', *Revista AICA*, (15), pp. 75–88.
- Costa, F.K.F. da (2023) 'Caraterísticas de um currículo para a educação dos Oficiais das Forças Armadas Angolanas', in *A educação enquanto fenómeno social: Propósitos econômicos, políticos e culturais*. Ponta Grossa-PR: Atena Editora,

- pp. 162–173. Available at: <https://www.atenaeditora.com.br/catalogo/ebook/a-educacao-enquanto-fenomeno-social-propositos-economicos-politicos-e-culturais-2> (Accessed: 1 June 2023).
- Cunha, M.P. and Rego, A. (2012) *Manual de gestão de pessoas e do capital humano*. 2ª ed. Lisboa: Edições Sílabo.
- Ferreira, J.C. dos S.F. and Nunes, T.S. (2021) 'Gestão de Pessoas no serviço de saúde militar nas Forças Armadas Angolanas', *Revista de Carreiras e Pessoas*, 11(3). Available at: <https://doi.org/10.23925/recap.v11i3.48227>.
- Fleury, M.T. and Fleury, A. (2001) 'Construindo o conceito de competência', *Revista de Administração Contemporânea*, 5(Especial), pp. 183–196. Available at: <https://doi.org/10.1590/S1415-65552001000500010>.
- Gonçalves, R. de A. (2021) 'Liderança estratégica presente na trajetória de oficiais do Exército Brasileiro', *Revista de Relaciones Internacionales, Estrategia y Seguridad*, 16(2), pp. 177–190. Available at: <https://doi.org/10.18359/ries.4977>.
- Häyrynen, H. and Läms, A.-M. (2021) 'The effectiveness of leadership development in the military context from a gender viewpoint', *International Journal of Human Resources Development and Management*, 21(2–3), pp. 99–115. Available at: <https://doi.org/10.1504/IJHRDM.2021.116920>.
- Henderikx, M. and Stoffers, J. (2022) 'An Exploratory Literature Study into Digital Transformation and Leadership: Toward Future-Proof Middle Managers', *Sustainability (Switzerland)*, 14(2). Available at: <https://doi.org/10.3390/su14020687>.
- Kawano, H. (2019) 'Developing Diversity Leadership in the Japan Self-Defense Forces: How Can We Develop Diversity Leaders?', in *Disaster, Diversity and Emergency Preparation*. IOS Press, pp. 73–89. Available at: <https://doi.org/10.3233/NHSDP190028>.
- Mandele, I.D. (2019) *The importance of leadership training in Angolan Armed Forces: Contributions for a renewed model*. Bournemouth University.
- Metwally, M. and Ruiz-Palomino, P. (2022) 'The Organisational Psychology of Ethical Military Leadership during Times of Crisis: Lessons from the COVID-19 Pandemic', *Journal of Military Ethics*, 21(3–4), pp. 337–346. Available at: <https://doi.org/10.1080/15027570.2023.2177419>.
- Montez, J.P. de J. (2021) *Caracterização das competências de liderança dos cadetes alunos da Academia Militar*. Master Thesis. Instituto Universitário Militar-Academia Militar de Portugal. Available at: <https://comum.rcaap.pt/handle/10400.26/36215> (Accessed: 7 June 2023).
- Muirequetule, V. and Machado, J. (2018) 'Ensino superior militar e desenvolvimento de competências de comando e liderança', *Revista Portuguesa de Investigação Educacional*, (Especial), pp. 152–171. Available at: <https://doi.org/10.34632/investigacaoeducacional.2018.3449>.
- Neves, S.C.L. das (2022) *O modelo de competências de liderança nas Forças Armadas*. Master Thesis. Instituto Superior de Economia e Gestão. Available at: <https://www.repositorio.utl.pt/handle/10400.5/27135> (Accessed: 19 June 2023).
- Özcelik, G. and Ferman, M. (2006) 'Competency Approach to Human Resources Management: Outcomes and Contributions in a Turkish Cultural Context', *Human Resource Development Review*, 5(1), pp. 72–91. Available at: <https://doi.org/10.1177/1534484305284602>.
- Page, M.J. et al. (2021) 'The PRISMA 2020 statement: an updated guideline for reporting systematic reviews', *BMJ*, p. n71. Available at: <https://doi.org/10.1136/bmj.n71>.
- Rehardiningtyas, D.A., Firdaus, M.F. and Sulistyanto, S. (2022) 'Military leadership competencies in the era of society 5.0: A theoretical review', *Journal of Advanced Research in Defense and Security Studies*, 1(1), pp. 65–80.
- Reis, V.C. dos and Zucco, L.P. (2020) 'As experiências das Oficiais da Marinha do Brasil no exercício do comando', *Revista Estudos Feministas*, 28, p. 14. Available at: <https://doi.org/10.1590/1806-9584-2020v28n361934>.
- Rouco, J.C.D. (2012) *Modelo de gestão de desenvolvimento de competências de liderança em contexto militar*. Doctoral Thesis. Universidade Lusíada de Lisboa. Available at: <http://repositorio.ulusiada.pt/handle/11067/136> (Accessed: 1 May 2023).
- Sakato, A. de O. (2021) *Estudo dos estilos de liderança nas Forças Armadas de Angola*. masterThesis. Available at: <https://repositorio.ual.pt/handle/11144/4902> (Accessed: 11 May 2023).
- Shamseer, L. et al. (2015) 'Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation', *BMJ*, 349, p. g7647. Available at: <https://doi.org/10.1136/bmj.g7647>.
- Souza, R. and Wood Jr, T. (2022) 'Múltiplas lentes de estudo e abordagem da liderança', *Revista de Administração de Empresas*, 62, p. e2021. Available at: <https://doi.org/10.1590/S0034-759020220607x>.
- Tchivela, G.V.A. (2020) *A competência comunicativa pedagógica nos docentes militares: Contributos para a Pedagogia Militar Angolana*. 1ª Ed. Luanda, Angola: Mayamba Editora.
- Toumbeva, T.H. et al. (2021) *Development and Evaluation of a Revised Peer Assessment for the U.S. Army Officer Candidate School*. USA: APTIMA INC WOBURN MA, p. 56. Available at: <https://apps.dtic.mil/sti/citations/AD1126519> (Accessed: 12 June 2023).
- Trachik, B. et al. (2020) 'Leader provided purpose: Military leadership behavior and its association with suicidal ideation', *Psychiatry Research*, 285, p. 112722. Available at: <https://doi.org/10.1016/j.psychres.2019.112722>.
- Vilelas, J. (2020) *Investigação: o processo de construção do conhecimento*. 3ª Ed. Edições Sílabo.

Reassessing the Inhibiting Factors of Entrepreneurship Development in the SME Segment

Rebecca Kukuwa Odoom¹, John Amoah², Emmanuel Asiedu Yankey³, Paul Baidoo³ and Benjamin Aidoo⁴

¹Takoradi Technical University, Ghana

²KAAF University College, Ghana

³Green Gold Ghana, Ghana

⁴Twyford Ghana, Ghana

rebecca.ackah@gmail.com

jamoah29@gmail.com

Abstract: While entrepreneurial barriers within the SME segment remain a germane issue not least, in the milieu that entrepreneurship and SME development contribute a hefty percentage to the global economy, especially in developing countries, little is to date known about barriers to entrepreneurship development and how to overcome it in the SMEs segment. Scholars suggest that knowing the factors that prevent entrepreneurship development is the bedrock of SMEs' growth and sustainability. However, the current study investigates the barriers to entrepreneurship development in the SME segment. The present study deployed articles from reputable scientific databases: Web of Science, Scopus, EHRPLUS, EBSCO, Google Scholar, etc. to solicit information on the subject matter under discussion using the keywords search. Out of the numerous articles downloaded, thirty-five of them were used by the researchers to achieve the study objective. From the reviewed literature, it is therefore established that factors such as lack of risk-taking capacity, lack of a Strategic Plan, lack of managing finances, and inadequate market experience usually serve as hindrances to the growth and development of SMEs within the scope of developing countries.

Keywords: Inhibiting factors, Entrepreneurship, SME segment, Development

1. Background of the Study

While entrepreneurial barriers within the SME segment remain a germane issue (Cupido, 2003; Belás et al. 2018; Klapper et al. 2006; Fatoki & David, 2010; Mehrez, 2019; Chaturvedi & Goyal, 2012) not least, on the milieu that entrepreneurship and SMEs development contribute a hefty percentage to the global economy, especially in the developing countries (Islam & Mamun, 2022; Hawi, et al. 2022; Subhani, 2022), yet, relatively little is till date known about barriers to entrepreneurship development and how to overcome it in the SMEs segment. This assertion is corroborated by many studies including that of Khanin, et al. (2022) who recently lamented that barriers to entrepreneurship prevent opportunity recognition and have a long-term effect on SME development and called for a comprehensive review and further empirical studies from developing countries' perspective. It has been argued that though entrepreneurship development is linked with income generation and economic growth is a phenomenon associated with wealth generation and economic development, huge concerns have been expressed over barriers to entrepreneurship development in the SME segment including lack of capacity, lack of risk-taking capacity, lack of a strategic plan, managing finances and inadequate market experience (Mehrez, 2019; Khanin, et al. 2022), therefore, a study into how entrepreneurs and SMEs can overcome barriers and challenges to entrepreneurship development is welcoming news. This is particularly important, especially, given the concerns raised by many scholars about the lack of studies that specifically look into barriers to entrepreneurship development in the SME Segment from the developing economies' perspective (Randa & Atiku, 2021; Hadjimanolis, 1999). Therefore, it is important to define SMEs in the context of Ghana. Since every nation has its definition depending on the criteria used to define it, it has become quite challenging to come up with one (Salikin et al., 2014; Kwaku Amoah, 2018). But Abor & Quartey (2010) classified Ghanaian SMEs according to the size of their workforces, categorizing them as 0–9 micro, 10–99 small, and 100–499 medium enterprises. Additionally, the Ghana Statistical Service (GSS) categorizes any organization or commercial entity that employs between 1 and 5 individuals as a micro, 6 to 30 as a small, 31–100 as a medium, and more than 100 as a large enterprise (Amoah & Amoah, 2018). The value of fixed assets was subsequently used to define SMEs more precisely in the same publication. In a similar vein, the National Board for Small Scale Industries (NBSSI), which is in charge of overseeing the operations of SMEs in Ghana, classified SMEs by utilizing their workforce and fixed assets as the primary criteria.

It seems therefore logical that entrepreneurs and SME owners/managers, seeking to gain sustenance and contribute to economic development, would need to know the factors that prevent their growth and overcome barriers to development (Beck & Demircuc-Kunt, 2006). Studies have focused on the barriers to the

development of SMEs. The study conducted by Ivanová, (2017) focused on key factors that prevent the development of SMEs in the Slovak Republic. It was indicated that business owners of SMEs faced limited access to external sources of financing and a limited market, which has a detrimental effect on their development. Their study further demonstrated that a lack of innovation also affects the growth and development of entrepreneurship. In addition, Klapper et al. (2006) conducted a study on entry regulation as a barrier to entrepreneurship. The study outcome indicated that regulation and other intellectual properties affect the growth of entrepreneurs. The study suggests that the availability of financing, the degree of protection of intellectual property, and labor regulations are needed for entrepreneurial development in the SME segment.

Given the fact that entrepreneurship skills and specifically SMEs contribute to the growth of the economy (Gnyawali, & Fogel, 1994; Obaji & Olugu, 2014), identifying the barriers to entrepreneurship development in SMEs development is, without doubt, the way to go; especially, in the developing countries to prepare for the dynamic business environment (Tambunan, 2007; Awogbenle & Iwuamadi, 2010; Ahmed & Nwankwo, 2013). In this respect, research into barriers to entrepreneurship development in the SME Segment could help entrepreneurs to develop and achieve their strategic goals is highly justified.

2. Literature Review/Problematization

It is impossible to undervalue the enormous contributions made by Small and Medium-Sized Enterprises (SMEs) around the globe (Sanjo & Ibrahim, 2017; Jibril et al., 2019). The importance of SMEs in encouraging countries' socioeconomic development, particularly in developing countries, cannot be emphasized. SMEs are regarded as making significant contributions to lowering the country's unemployment rate through job creation and GDP (Kumar, 2017; Kwaku Amoah, 2018). According to Pandya (2012), SMEs are known to undertake critical tasks in the majority of developing nations like reducing poverty, enhancing income distribution, creating jobs, and contributing to export growth. These donations stimulate business development, industry, and the rural economy. Similarly to this, Amoah & Jibril (2020); Kachembere, (2011) pointed out that SMEs are widely known for encouraging grassroots economic growth and contributing significantly to social development and poverty reduction. As SMEs serve as an engine contributing to the economy, their growth and development become a critical issue. Both developed and developing countries are living testimonies of the contributions of SMEs. Scholars suggest that knowing the factors that prevent entrepreneurship development is the bedrock of SMEs' growth and sustainability (Abimbola & Agboola, 2011; Antoniuk, et al. 2017; Meijer, et al. 2019; Fernandez & Ali, 2015). Hence, entrepreneurs should synchronize with the barriers to their development (Davies, et al. 2019); government policies (Jaroslav, et al. 2014) regulations (Klapper et al. 2006), and financial support (Ivanová, 2017). Studies have established that barriers prevent opportunity recognition and can affect entrepreneurial skills and development (Khanin, et al. 2021; Halim, et al. 2017). However, Khanin (2021) submits that efficient, transparent, and responsive to barriers to entrepreneurship development is required to inspire confidence in entrepreneurs to take risks. Therefore, the success of today's entrepreneurs is arguably partly hinged on their responsiveness towards barriers/challenges, and, in part on how they can pursue sustainable strategies which ultimately affect the SME segment (Korcsmaros & Simonova, 2017). It, therefore, becomes practically and theoretically imperative for researchers to derive a solid understanding of barriers including lack of risk-taking capacity, lack of a strategic plan, managing finances, and inadequate market experience and those can affect entrepreneurship development in the SME segment. A study conducted by Ackah & Vuvor (2011) found that entrepreneurs are faced with limited finance, limited marketing strategies, and less strategic vision which affects their development. According to resource-based theory, SME owner-managers frequently lack internal resources to handle various economic difficulties such as service sector management and therefore rely on external service providers (De Bruyckere et al., 2020; Čera et al., 2019). This indicates that the SME segment is extensively by barriers to entrepreneurship development. However, the current study seeks to investigate the barriers to entrepreneurship development in the SME segment.

2.1 Lack of Risk-Taking Capacity

One of the key inhibiting factors for entrepreneurship development in the SME segment is the lack of risk-taking capacity among individuals. Entrepreneurship inherently involves taking risks, whether it is financial, professional, or personal. However, many potential entrepreneurs may hesitate to take risks due to various reasons such as fear of failure, lack of confidence, or limited financial resources. This inhibiting factor can significantly impede the growth and development of entrepreneurship in the SME segment. Research conducted by Mat et al., (2020), found that risk-taking propensity is a crucial determinant of entrepreneurial success. Entrepreneurs who are willing to take calculated risks are more likely to seize opportunities, innovate, and adapt to the changing business environment. On the other hand, individuals with a low risk-taking capacity may struggle to overcome challenges and may be reluctant to invest in their ventures. This lack of risk-taking capacity

can hinder the growth of entrepreneurship in the SME segment. To address this inhibiting factor, it is essential to provide aspiring entrepreneurs with the necessary support and resources to build their risk-taking capacity. This can be achieved through entrepreneurship training programs, mentorship initiatives, and access to financial assistance. By equipping individuals with the skills and knowledge to assess risks effectively and develop strategies to mitigate them, the barriers to entrepreneurship development in the SME segment can be overcome.

2.2 Lack of a Strategic Plan

Another inhibiting factor for entrepreneurship development in the SME segment is the lack of a strategic plan. Many individuals may have innovative ideas and the motivation to start their businesses, but without a well-defined strategic plan, they may struggle to navigate the complexities and uncertainties of the business landscape. A strategic plan provides a roadmap for entrepreneurs, outlining their goals, target market, competitive advantage, and growth strategies.

According to a study by McGee & Peterson, M. (2019), the presence of a strategic plan is positively associated with entrepreneurial success. Entrepreneurs who have a clear vision and a well-defined plan are more likely to make informed decisions, allocate resources effectively, and adapt to market changes. Conversely, the absence of a strategic plan can lead to haphazard decision-making, lack of focus, and difficulty in securing funding or attracting customers. To address this inhibiting factor, it is crucial to emphasize the importance of strategic planning in entrepreneurship development. Entrepreneurship education and training programs should incorporate modules on strategic planning, helping individuals develop the skills to create and execute a comprehensive plan. Additionally, support systems such as business incubators and mentorship programs can provide guidance and expertise to aspiring entrepreneurs in formulating their strategic plans.

In conclusion, the lack of risk-taking capacity and the absence of a strategic plan are significant inhibiting factors for entrepreneurship development in the SME segment. By addressing these challenges through targeted interventions, such as entrepreneurship training programs and mentorship initiatives, individuals can be equipped with the necessary skills and resources to overcome these barriers and foster a thriving entrepreneurial ecosystem in the SME segment.

2.3 Financial Constraints

Financial Constraints are often cited as one of the main inhibiting factors in entrepreneurship development within the small and medium-sized enterprises (SME) segment. Limited access to capital and lack of financial resources can hinder the growth and development of small businesses, preventing them from seizing opportunities and expanding their operations. According to a study conducted by Indrawati, (2020), financial constraints can restrict SMEs from investing in research and development, acquiring new technologies, and hiring skilled employees, all of which are crucial for their long-term success. In addition, limited access to financing options, such as bank loans or venture capital, can significantly hinder the ability of SMEs to scale up their operations and compete in the market Megersa, (2020). Therefore, addressing the issue of financial constraints is essential for promoting entrepreneurship development in the SME segment.

2.4 Inadequate Market Experience

Another significant inhibiting factor in entrepreneurship development within the SME segment is inadequate market experience. Many entrepreneurs in this segment lack prior experience or knowledge of the specific market in which they operate, making it challenging for them to understand consumer needs, adapt to market changes, and effectively position their products or services. According to a study by Mihajlović & Stojanović, (2019), inadequate market experience can lead to poor decision-making, ineffective marketing strategies, and failure to identify growth opportunities, ultimately hindering the development and growth of SMEs. Moreover, the lack of market experience can make it difficult for SMEs to build relationships with suppliers, distributors, and other key stakeholders, limiting their access to critical resources and networks Camanzi & Giua, (2020). To overcome this inhibiting factor, entrepreneurs in the SME segment should invest in market research, seek mentorship or guidance from experienced professionals, and continuously update their knowledge and skills to navigate the dynamic market landscape effectively.

2.5 Entrepreneurship Development

Entrepreneurship Development plays a crucial role in the growth and sustainability of small and medium-sized enterprises (SMEs). It involves the creation, nurturing, and expansion of entrepreneurial ventures, which contribute significantly to job creation, economic development, and innovation. However, several inhibiting factors hinder the development of entrepreneurship in the SME segment. One inhibiting factor is the lack of

access to finance. SMEs often face difficulties in accessing capital, as they are perceived as high-risk investments by financial institutions. This limited access to finance restricts their ability to invest in new technologies, expand their operations, and hire skilled employees. According to a study by Jabbouri, I., & Farooq, O. (2021), the lack of access to finance is one of the main obstacles faced by SMEs in developing countries. Therefore, policymakers and financial institutions must develop innovative financing mechanisms and provide targeted support to SMEs to overcome this barrier.

Another inhibiting factor is the limited availability of skilled human resources. SMEs often struggle to attract and retain talented individuals due to their limited resources and inability to offer competitive compensation packages. This lack of skilled human resources hampers their ability to innovate, adopt new technologies, and compete in the market. A study conducted by Bilan et al., (2020), found that the shortage of skilled labor is a significant challenge faced by SMEs in many countries. To address this issue, governments and industry associations should collaborate to provide training programs, internships, and incentives to develop a skilled workforce that is tailored to the needs of SMEs. In conclusion, the inhibiting factors of entrepreneurship development in the SME segment include the lack of access to finance and the limited availability of skilled human resources. These factors hinder the growth and sustainability of SMEs, which are crucial for job creation and economic development. Therefore, policymakers, financial institutions, and industry associations need to work together to address these barriers and create an enabling environment for entrepreneurship in the SME segment.

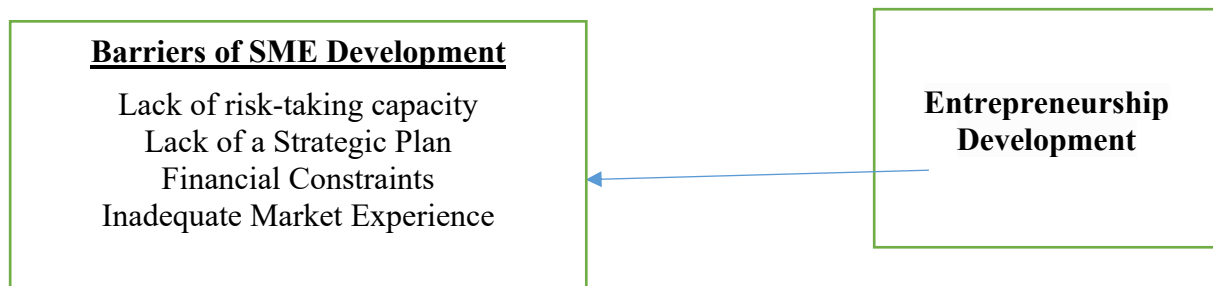


Figure 1: Proposed conceptual framework

3. Methodology

The SME industry is classified as one of the key sectors that is contributing tremendously to the growth and development of Ghana. Given this, conducting a study on this sector is of great importance. The study is wholly a qualitative investigation, and the researcher felt it was necessary to use document analysis as their primary research method to meet the study's predetermined goal. To study, evaluate, and come to a conclusion with positive meaning, document analysis is therefore described as using both printed and electronic versions of documents (Bowen, 2009). Even though document analysis appears to be a straightforward research method, it is a great place to start when trying to find pertinent material across a range of more general subject areas. Scientific publications from both commercial and free databases, including Google Scholar, Scopus, and Thomas Reuter's Web of Science, were accessed using the keywords search. Theme analysis was also used since it gives the researcher the chance to look for connections across various research topics while keeping a deductive end in mind. Due to the abundance of literature addressing the topic, document analysis offers significant insight and a rich context by drawing on the work of numerous other academics and researchers. Document analysis is a useful technique for performing a study of a qualitative inquiry, according to the works of (Bowen, 2009; Amoah, 2020; Keles et al., 2020; Maharani & Gozali, 2015; Osakwe, 2016). To accomplish the goal of the study, the researcher downloaded a large number of scientific articles that were published in English, giving priority to those studies that were required. Therefore, the present study's primary focus was on inhibiting factors of SME development. Thus, in addition to the researchers understanding and the creation of the conceptual framework in Figure 1, some secondary material was sourced to assist in reaching the results needed for the current study. In conducting a qualitative inquiry in the modern day, other researchers and academics are advised to examine the works of (Wardati & Er, 2019; Osakwe, 2016; Owen, 2014; Amoah 2020).

4. Implications for Theory, Practice, and Concluding Thoughts

Despite the study's constrained scope, its conclusions are quite helpful. As a result of the study's addition to the literature and the applicability of the information or data gathered in the study area, where less research or publications have been made about the use of barriers to SME development, the study fills a void that has long existed in underdeveloped nations like Ghana. By using a developing country as a case study, the current study's

theoretical contribution includes the development of a conceptual framework that will be empirically tested to give a greater theoretical understanding of the subject area. Additionally, the research has offered a clear pathway for reassessing the inhibiting factors affecting the development of SMEs. Additionally, the current study offers some useful insights for industry participants and practitioners.

Small and Medium Enterprise managers/owners would take inspiration from the findings of the current study with relevance to the factors inhibiting their growth and development. By and large, management of SMEs within the scope of developing countries must therefore pay much attention to these factors and find solutions on how best to tackle such barriers. Moreover, the outcome of the study would enable managers and employees to always ensure that better implementations of decisions are adhered to since it has impacts on the businesses. Importantly, the study would also help practitioners within the industry to articulate respectable measures so far as their growth and development are concerned and by and large control the managerial lapses or practices which might arise.

5. Limitation of the Study

The primary limitation of the current study is the lack of empirical testing of the proposed conceptual framework. The use of a qualitative approach and document analysis also presented challenges because other qualitative methods, such as systematic literature reviews, could have produced equally valuable data for the study.

References

- Abimbola, O. H., & Agboola, G. M. (2011). Environmental factors and entrepreneurship development in Nigeria. *Journal of sustainable development in Africa*, 13(4), 166-176.
- Abor, J., & Quartey, P. (2010). Issues in SME development in Ghana and South Africa. *International research journal of finance and economics*, 39(6), 215-228.
- Ahmed, A., & Nwankwo, S. (2013). Entrepreneurship development in Africa: an overview. *World Journal of Entrepreneurship, Management, and Sustainable Development*.
- Amoah, S. K., & Amoah, A. K. (2018). The role of small and medium enterprises (SMEs) to Employment in Ghana. *International Journal of Business and Economics Research*, 7(5), 151-157.
- Antoniuk, L., Gernego, I., Dyba, V., Polishchuk, Y., & Sybirianska, Y. (2017). Barriers and opportunities for hi-tech innovative small and medium enterprises development in the 4th industrial revolution era. *Problems and Perspectives in Management*, 15(4), 100-113.
- Awogbenle, A. C., & Iwuamadi, K. C. (2010). Youth unemployment: Entrepreneurship development program as an intervention mechanism. *African journal of business management*, 4(6), 831.
- Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance*, 30(11), 2931-2943.
- Belás, J., Dvorský, J., Kubálek, J., & Smrčka, L. (2018). Important factors of financial risk in the SME segment. *Journal of International Studies*.
- Bowen, G. A. (2009) 'Document analysis as a qualitative research method', *Qualitative Research Journal*, 9(2), pp. 27–40. DOI: 10.3316/QRJ090202
- Bilan, Y., Mishchuk, H., Roshchuk, I., & Joshi, O. (2020). Hiring and retaining skilled employees in SMEs: problems in human resource practices and links with organizational success. *Business: Theory and Practice*, 21(2), 780-791.
- Camanzi, L., & Giua, C. (2020). SME network relationships and competitive strategies in the agri-food sector: Some empirical evidence and a provisional conceptual framework. *European Business Review*, 32(3), 405-424.
- Chaturvedi, A., & Goyal, S. (2012). Changing severity of impediments for entrepreneurs in India: an empirical analysis. *International Journal of Entrepreneurship and Small Business*, 16(1), 1-32.
- Cupido, C. (2003). *Barriers to entrepreneurship in the Western Cape* (Doctoral dissertation, Cape Technikon).
- Davies, I. A., Haugh, H., & Chambers, L. (2019). Barriers to social enterprise growth. *Journal of Small Business Management*, 57(4), 1616-1636.
- Fernandez, R., & Ali, S. (2015). SME contributions for diversification and stability in the emerging economies empirical study of the SME segment in the Qatar economy. *The Journal of Contemporary Issues in Business and Government*, 21(1), 23-45.
- Fatoki, O., & David, G. (2010). Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach. *African Journal of Business Management*, 4(5), 729-738.
- Gnyawali, D. R., & Fogel, D. S. (1994). Environments for entrepreneurship development: key dimensions and research implications. *Entrepreneurship theory and practice*, 18(4), 43-62.
- Hadjimanolis, A. (1999). Barriers to innovation for SMEs in a small less developed country (Cyprus). *Technovation*, 19(9), 561-570.
- Halim, H. A., Ahmad, N. H., Hanifah, H., & Ramayah, T. (2017). The impediments to entrepreneurial ventures at the bottom of the pyramid community in northern Malaysia. In the *handbook of research on small and medium enterprises in developing countries* (pp. 67-81). IGI Global.
- Hawi, A., Al-Kuwari, F., & Garonne, C. (2022). Entrepreneurship Development in Qatar. In *Entrepreneurial Rise in the Middle East and North Africa: The Influence of Quadruple Helix on Technological Innovation*. Emerald Publishing Limited.

- Islam, N., & Mamun, M. (2022). Entrepreneurship development: An operational approach-text and cases with special reference to Bangladesh. *Available at SSRN*.
- Ivanová, E. (2017). Barriers to the development of SMEs in the Slovak Republic. *Oeconomia Copernicana*, 8(2), 255-272.
- Indrawati, H. (2020). Barriers to technological innovations of SMEs: how to solve them? *International Journal of Innovation Science*, 12(5), 545-564.
- Jaroslav, B., Přemysl, B., Jozef, H., & Roman, H. (2014, June). Significant attributes of creation and development of the economies in the SME segment. In *1 ST INTERNATIONAL CONFERENCE ON FINANCE AND ECONOMICS 2014* (p. 42).
- Jabbouri, I., & Farooq, O. (2021). Inadequately educated workforce and financing obstacles: International evidence from SMEs in developing countries. *International Journal of Managerial Finance*, 17(1), 118-137.
- Jibril, A. B., Kwarteng, M. A., & Chovancova, M. (2019, May). A Demographic Analysis of Consumers' Preference for Green Products. In *International Scientific Conference CONTEMPORARY ISSUES IN BUSINESS, MANAGEMENT AND ECONOMICS ENGINEERING* (pp. 9-10). <https://doi.org/10.3846/cibmee.2019.044>
- Khanin, D., Rosenfield, R., Mahto, R. V., & Singhal, C. (2022). Barriers to entrepreneurship: opportunity recognition vs. opportunity pursuit. *Review of Managerial Science*, 16(4), 1147-1167.
- Klapper, L., Laeven, L., & Rajan, R. (2006). Entry regulation as a barrier to entrepreneurship. *Journal of financial economics*, 82(3), 591-629.
- Korcsmaros, E., & Simonova, M. (2017). Barriers to SME development. *Aktual'ni Problemy Ekonomiky= Actual Problems in Economics*, (188), 44.
- Mat, Z., Yusoff, M., Zainol, F., & Afthanorhan, A. (2020). Risk-taking propensity & personality of women entrepreneurs in Malaysia. *J. Crit. Rev.*, 7, 1214-1221.
- McGee, J. E., & Peterson, M. (2019). The long-term impact of entrepreneurial self-efficacy and entrepreneurial orientation on venture performance. *Journal of small business management*, 57(3), 720-737.
- Megersa, K. (2020). Improving SMEs' access to finance through capital markets and innovative financing instruments: some evidence from developing countries.
- Mihajlović, I., & Stojanović, A. (2019). How to address and understand the failure of SMEs: framework and factors. How to prevent SME failure (Action based on comparative analysis in Visegrad countries and Serbia). *Technical Faculty in Bor. Bor, Serbia*, 663-694.
- Mehrez, A. (2019). Investigating critical obstacles to entrepreneurship in emerging economies: A comparative study between males and females in Qatar. *Academy of Entrepreneurship Journal*, 25(1), 1-15.
- Meijer, L. L. J., Huijben, J. C. C. M., Van Boxtael, A., & Romme, A. G. L. (2019). Barriers and drivers for technology commercialization by SMEs in the Dutch sustainable energy sector. *Renewable and Sustainable Energy Reviews*, 112, 114-126.
- Obaji, N. O., & Olugu, M. U. (2014). The role of government policy in entrepreneurship development. *Science Journal of Business and Management*, 2(4), 109-115.
- Osakwe, C. N. (2016). Crafting an effective brand-oriented strategic framework for growth-aspiring small businesses: A conceptual study. *Qualitative Report*.
- Randa, I. O., & Atiku, S. O. (2021). SME financial inclusivity for sustainable entrepreneurship in Namibia during COVID-19. In *Handbook of research on sustaining SMEs and entrepreneurial innovation in the post-COVID-19 era* (pp. 373-396). IGI Global.
- Subhani, A. (2022). The quality of entrepreneurship development service vocational high school: Assessment with SERVQUAL Model. *Journal of Educational and Social Research*, 12(2), 126-126.
- Tambunan, T. (2007). Entrepreneurship development: SMEs in Indonesia. *Journal of Developmental Entrepreneurship*, 12(01), 95-118.