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

**Teresa Dieguez[1,2], Paula Loureiro[1], Isabel Ferreira[1] and Mario Basto[1]**
[1] Polytechnic Institute of Cávado and Ave, Portugal
[2] Universidade Aberta, Portugal

tdieguez@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 (Huybrects & 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 (Myyryläinen, 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 Arágon (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.

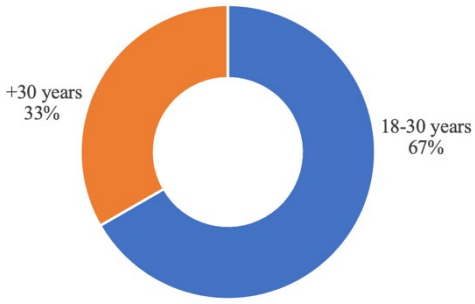


**Figure 1: Age of respondents (own elaboration)**

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.

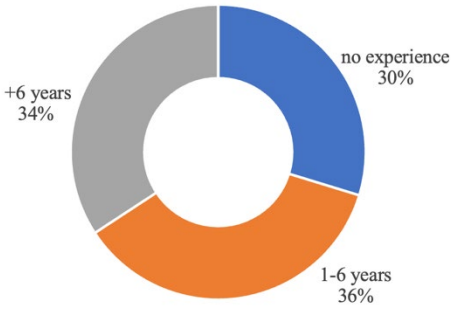


**Figure 2: Professional experience (own elaboration)**

### 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).

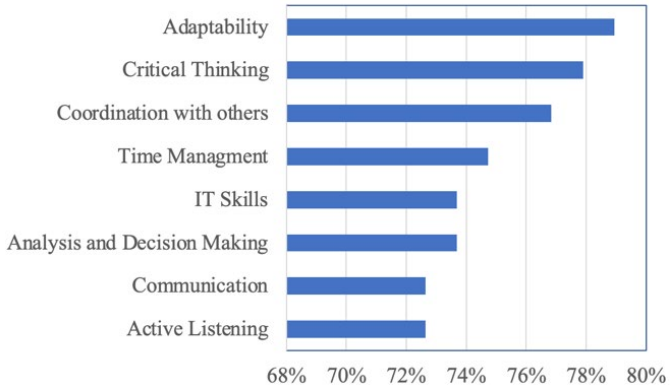


**Figure 3: Needed 21st-century skill (own elaboration)**

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)

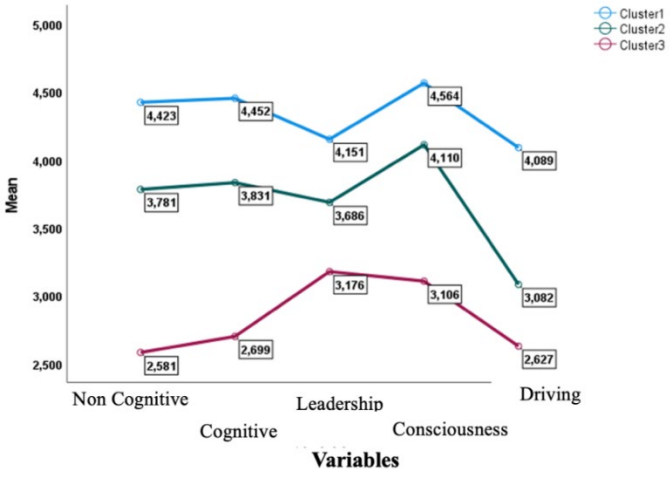


**Figure 5: Centroids for each cluster**

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** | Female | 20 (35,1%) | 27 (47,4%) | 10 (17,5%) | 57 (100,0%) |
| $p = 0.733$ | Male | 22 (40,7%) | 25 (46,3%) | 7 (13,0%) | 54 (100,0%) |
| **Age** | 18-30 years | 24 (32,4%) | 36 (48,6%) | 14 (18,9%) | 74 (100,0%) |
| $p = 0.153$ | 31 or more | 18 (48,6%) | 16 (43,2%) | 3 (8,1%) | 37 (100,0%) |
| **Profissional experience** | No experience | 6 (18,2%) | 20 (60,6%) | 7 (21,2%) | 33 (100,0%) |
| $p = 0.055$ | 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** | No | 14 (32,6%) | 21 (48,8%) | 8 (18,6%) | 43 (100,0%) |
| $p = 0.585$ | 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.

Garcia-González, A., Ramírez-Montoya, M. S., De León, G., & Arágon, S. (2020). El empreendimento 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.

Lavrinoviča, 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.

Myyryläinen, 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., & Portuguez-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.