

Evaluation of Port Managers' Perception of Organizational Unlearning and its Influence on Organizational Performance

Osvaldo Enoque Martins da Cruz and Paulo Gonçalves Pinheiro

NECE, Department of Management, University of Beira Interior, Portugal

osvaldo.cruz@ubi.pt

pgp@ubi.pt

Abstract: Organizational unlearning is widely considered an essential condition for successful adaptation to environmental changes, as it promotes organizational learning and improves company performance, Tsang and Zahra (2008). With transformations in the external environment, experiences and often-valued beliefs become an obstacle to organizational adaptation, Becker (2018). According to Hedberg (1981), an organization's inability to unlearn becomes a weakness in the long run, since over time, much of the strategic knowledge acquired becomes obsolete. In this sense, organizational success depends on its ability to abandon knowledge, values, behaviours or routines which, although they were sources of competitive advantage in the past, are no longer so today. This process of giving up knowledge must start with people, because they are the ones who make organizational unlearning possible, since organizations unlearn through them, since they don't have mental activities. (Cegarra-Navarro; Wensley; Batistic; Evans *et al.*, 2021)). In this article we analyze port managers' perceptions of the unlearning practices implemented in their organizations and their influence on their organizational performance, since the sector faces challenges in terms of process modernization, competitiveness, safety and expansion. Based on a quantitative approach, we conducted surveys of Angolan port managers and used statistical methods to test two hypotheses related to unlearning practices and organizational culture. To test the research hypotheses, we used Cronbach's alpha to assess the internal reliability of the items in the three constructs, simple linear regression to analyze the relationship between the variables organizational unlearning, unlearning practices and organizational culture and Pearson's correlation to examine the relationships between the variables. The results show that both unlearning practices and organizational culture are positively related to organizational performance. We point to future studies that analyze the barriers to unlearning and the role of AI in this context.

Keywords: Organizational unlearning, Unlearning practices, Organizational culture, Organizational performance

1. Introduction

Today's organizations are characterized by continuous change. These changes require the development of the capacity to learn along cognitive, behavioral and normative dimensions (Srithika and Brattacharyya, 2009). (2013) add that changes caused by the increasing variability and turbulence of the external environment have brought more uncertainty to the survival and development of companies. To increase their ability to adapt to the external environment, organizations need to constantly improve their organizational flexibility.

The field of organizational knowledge management has fostered research into organizational learning and *unlearning*, especially since the publication of Hedberg's (1981) article entitled "*How organizations learn and unlearn*". However, while studies on learning have progressed significantly, research on unlearning has been very limited (Tsang and Zahra, 2008).

Despite the consensus in the literature regarding the importance and necessity of unlearning, especially in organizational contexts, many researchers have expressed concerns regarding conceptual coherence, applicability, the unlearning cycle and the need to update obsolete knowledge (klammer, 2024; Chen *et al.*, 2024, Tsang and Zahra, 2008).

Xu *et al.* (2024) point out that although organizational unlearning plays a vital role in facilitating new product development, its unlearning micro-processes (i.e. how to effectively unlearn) remain poorly understood.

This article analyses port managers' perceptions of the unlearning practices established by organizations and their effects on organizational performance.

Based on the literature, we defined two research hypotheses:

H1: *Organizational unlearning practices have a positive influence on organizational performance.*

To support this research hypothesis, we used the study by Cegarra-Navarro and Wensley (2019), in which the authors state that knowledge can quickly become obsolete, requiring constant renewal and adaptation. Organizations that cling excessively to established knowledge run the risk of losing their competitive advantage by failing to adapt to market changes.

Day (2024) states that when an organization actively participates in unlearning, it eliminates obsolete knowledge, facilitating the assimilation of new ideas, methodologies and practices. This dynamic is essential for cultivating a culture of continuous learning and innovation, especially in rapidly evolving environments where adaptability is decisive for maintaining competitive advantage.

According to the authors, it is essential for organizations to develop the capacity to unlearn in order to update their knowledge base, adapt to new conditions, remain competitive and improve organizational performance.

H2: Organizational culture positively influences organizational performance.

In order to maintain a clearer understanding of the influence of a company's culture on organizational unlearning, we sought to identify the cultural practices developed by port managers to promote and encourage the identification of obsolete routines.

According to Pardim et al. (2024), an organization is structured to coordinate activities and control the performance of its members, and can be classified as mechanistic or organic, depending on its objectives, strategies and environment. An organization's ability to respond to market pressures is crucial to its performance. In this context, the behaviour of managers and organizational culture are fundamental sources of competitive advantage. Investments aimed at generating ideas are necessary to ensure rapid adaptation to environmental changes.

2. Literature Review

2.1 Organizational Unlearning

The concept of organizational unlearning has often been mentioned in the literature without a clear definition of its process boundaries (Tsang and Zahra, 2008).

Studies of organizational unlearning began with Hedberg (1981), whose research analyzed Swedish companies that were struggling to avoid bankruptcy due to changes in the external environment and the failure to pay sufficient attention to the evolution of this environment (Sharma *et al.*, 2022).

The limitations in literature prevent a more comprehensive understanding of organizational unlearning. However, the topic has received increasing attention in recent years, with an emphasis on the conceptual construction of the process, as well as the identification of its stages and levels (Klammer (2024; Tsang and Zahra, 2008).

For Becker (2018), one of the reasons for the increased interest in organizational unlearning in recent years is related to the rapid changes in the business environment and the resulting organizational transformations.

In the last decade, unlearning has gained prominence due to its relevant role in overcoming outdated knowledge and promoting reflective learning, especially in more turbulent contexts (Xu *et al.*, 2024).

2.2 Unlearning Concept

In analyzing the existing literature on unlearning, it is possible to find various concepts. In this article we highlight those that present elements such as "conscious" and "intentional" elimination of "beliefs", "routines", "values", "change of action", "unloading", "renunciation", "discarding" as elements that connect the various concepts.

Table 1: Concepts of organizational unlearning

Authors; year	Concepts	Titles	Magazines
Johannessen and Hauan (1994)	Unlearning requires changing methods of action;	Communication-A systems theoretical point of view (third-order cybernetics).	<i>Systems Practice</i> (Springer)
Holan and Phillips (2004)	Unlearning as the intentional removal of established knowledge in an organization;	<i>Remembrance of things past? The dynamics of organizational forgetting.</i>	Management Science
Akgun et al., (2007)	They consider unlearning as the elimination of organizational memory and it is operationalized as changes in the "beliefs" and "routines" of organizations;	Organizational unlearning as changes in beliefs and routines in organizations.	Journal Of Organizational Change Management
Tsang and Zahra (2008)	Organizational unlearning is the shedding of old routines to make way for new ones;	Organizational unlearning.	Human Relations

Authors; year	Concepts	Titles	Magazines
Yildiz (2010)	It introduces the concept of unlearning as a key factor in the success of knowledge transfer;	Compatibility and unlearning in knowledge transfer in mergers and acquisitions.	Scandinavian Journal Of Management
Wang <i>et al.</i>, (2019)	Unlearning is a process that takes place at the individual level and then spreads to the organization as a whole;	Individual unlearning, organizational unlearning and strategic flexibility the down-up change perspective.	Baltic Journal Of Management
Kmieciak, (2020).	It is a conscious and intentional process of renunciation, which does not necessarily imply the permanent destruction of what has been learned, but rather the choice not to use what is stored in memory;	<i>Critical reflection and innovative work behavior: The mediating role of individual unlearning.</i>	Personnel Review
Hamza <i>et al.</i>, (2024)	Organizational unlearning occurs when organizations discard knowledge, beliefs or routines;	Unlearning diversity management.	Journal Of World Business
Pardim <i>et al.</i>, (2024)	It is a conscious and intentional process of renunciation, which does not necessarily imply the permanent destruction of what has been learned, but rather the choice not to use what is stored in memory;	Determining factors of individual and organizational unlearning in the generation and realization of ideas: a multigroup analysis from organizational structure.	Innovation & Management Review
Xu (2024)	Organizational unlearning is the process by which companies intentionally change their "beliefs" and "routines";	Organizational unlearning: A process of tension imposition, integration, and splitting.	European Management Review
For Klammer <i>et al.</i>, (2024)	Organizational unlearning involves the intentional elimination of obsolete knowledge in order to facilitate innovation.	Organizational unlearning as a process: What we know, what we don't know, what we should know.	Management Review Quarterly

2.3 Criticism of Unlearning

Although terms such as knowledge, logic, routines and beliefs are widely used to describe what constitutes organizational unlearning, existing studies do not always clearly define the types of knowledge structures that are being investigated and unlearned (Klamman *et al.*, 2024; Xu, *et al.*, 2024).

Despite the growing acceptance of organizational unlearning in scientific literature, the concept has generated controversy, mainly due to its conceptual ambiguities (Klammer *et al.*, 2022). In this sense, Klammer *et al.* (2023) argued that the term "organizational unlearning" can convey the mistaken idea that knowledge can simply be eliminated, as if knowledge structures could be objectified and selectively erased from organizational memory.

In a more recent publication, the authors (Klammer *et al.* in 2024) reinforce that although the concept has gained ground in scientific research, it continues to raise debate due to the lack of clarity and consensus on its definition and practical application.

In addition, many researchers present unlearning with an exclusively positive connotation. However, this process has some weaknesses. One of the criticisms is the fact that, in the reality of organizations, the knowledge discarded is not always inferior to the new knowledge adopted (Tsang and Zahra, 2008). Furthermore, old knowledge is not completely eliminated, but tends to coexist with new knowledge, at least in the short and medium term (Hamza-Orlinska *et al.*, 2024).

A particularly strong criticism of the concept of unlearning is raised by Howells and Scholderer (2016) who consider unlearning to be a superfluous term, arguing that there is no record of a definition even in the main psychology dictionaries, thus questioning its conceptual and scientific legitimacy.

2.4 Organizational Performance

In digital and constantly evolving economies, digital transformation has emerged as a key strategy for organizations to face market crises and improve their functional efficiency (Zhan *et al.*, 2024).

These digital transformations involve not only technological updates, but also environmental, cultural and strategic changes. Organizational culture and market-oriented strategies are also impacted, helping to

strengthen the company's strategic flexibility. Together, these elements help the process of replacing obsolete routines (Wang et al., 2013; 2019).

In this scenario, organizations must not only use their existing capabilities, but also develop new competencies in order to achieve long-term success and maintain a sustainable competitive advantage.

The act of unlearning certain beliefs is believed to facilitate the development of new, more relevant and valuable knowledge. Scholars have described unlearning contexts as renewal environments, which create better opportunities for decision-making and promote higher quality performance (Cegarra-Navarro and Wensley, 2019).

According to Hamza-orlinska et al. (2024), organizational unlearning occurs when organizations reject or abandon knowledge, beliefs or routines that have become outdated. An important assumption is that certain information, when retained, can inhibit organizational performance

In this way, this study promotes the analysis of the perception of port managers in Angola regarding the unlearning practices adopted by their organizations and their influence on organizational performance.

3. Methods

This study used the quantitative research method through the application of a questionnaire survey, with the aim of collecting empirical data to test the study's hypotheses. To ensure the content validity and appropriateness of the constructs, especially the measures related to the elimination of routines in the Angolan context, a pilot test was carried out with senior professionals from Angolan ports. The participating managers were invited to answer the questionnaire and provide feedback on the wording and structure of the questions. Based on these contributions, some questions were revised to improve the clarity and comprehension of the instrument.

It was explained to the managers that the survey was for academic purposes only. They were also assured that the answers would be kept confidential and promised that a summary of the results would be sent to them.

The questionnaire was administered in person, in physical format, at the respondents' workplace. This approach was adopted due to the high probability of low adherence to the survey if carried out remotely. In all, 77 port managers took part in the study, covering positions ranging from section heads to executive directors. In order to maximize the response rate, specific days for administering the questionnaires were defined in advance in conjunction with the human resources department. A technician from the organization accompanied us and introduced us to the managers of the different functional areas. During the survey, participants received two documents: A letter of introduction presenting the purpose of the study and the structured questionnaire, with closed questions on a likert scale from 1 (totally disagree) to 7 (totally agree).

The questionnaire consisted of one dependent variable (Organizational Performance) and two independent variables (Organizational Unlearning Practices and Organizational Culture). In addition, measures were taken to ensure the reliability of the data.

3.1 Socio-Demographic Profile of the Sample

The sample consisted of 47% female and 53% male participants. With regard to education, 88% of the respondents had a bachelor's degree and 12% a master's degree. As for age, 34% of the managers were aged between 38-47, 29% between 48-57, 20% between 28-37 and 18% were over 57. In terms of seniority in the organization, 52% had been with the company for more than 10 years, 26% between 6 and 10 years and 22% between 1 and 5 years. In terms of positions held, the most important were executive directors (5%), directors (24.7%), department heads (18%) and section heads (17%) and professionals from other areas (35%). The managers of two large ports took part in the survey, namely the port of Luanda (42%) and Lobito (58%).

3.2 Construction of Constructs and Reliability Analysis

Based on our hypotheses, three constructs were defined, namely unlearning practices, organizational performance and organizational culture.

Given the exploratory nature of the study, a reliability analysis was carried out using Cronbach's alpha, with the aim of verifying that the items in the constructs were internally consistent and properly interrelated.

4. Results

4.1 Reliability Test

Three constructs of the research model were tested and their reliability assessed using the Cronbach's alpha coefficient:

The first construct, referring to organizational unlearning practices, is made up of five *items* and showed $\alpha = 0.755$, indicating good data reliability.

The second construct, related to organizational performance, obtained $\alpha = 0.735$, also considered satisfactory.

The third construct, organizational culture, is made up of four items and showed $\alpha = 0.631$, which, although less than ideal, is acceptable within the parameters of exploratory research and is classified as moderately reliable.

5. Hypothesis Testing

5.1 Correlation Analysis

Table 2: Pearson correlations

	PDO	DO	MCO
PDO	1	.916**	.980**
Sig. (2-tailed)		<.001	<.001
N	77	77	77
DO	.916**	1	.978**
Sig. (2-tailed)	<.001		<.001
N	77	77	77
COM	.980**	.978**	1
Sig. (2-tailed)	<.001	<.001	
N	77	77	77

To assess the linear relationship between the variables Organizational Unlearning Practices, Organizational Performance and Organizational Culture, a Pearson correlation analysis was carried out based on the 77 observations. The results shown in the table above indicate positive and statistically significant correlations between the variables analyzed. There is a strong correlation between ODP and OD ($r=0.916$; $p<0.001$) indicating that an increase in one of these variables has an impact on the other. Similarly, we can observe the correlation between Organizational Performance and Organizational Culture ($r=0.978$; $p<0.001$) indicating that organizational culture has a strong influence on organizational performance.

Table 3 - Linear regression with one variable

Regression

Entered/Removed Variables

Model	Entered Variables	Variables Removed	Method
1	PDO	.	Enter

a. Dependent Variable: DO

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.916	.839	.837	.27488

a. Predictors: (Constant), PDO

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	29,458	1	29,458	389,867	<,001
Residual	5,667	75	,076		
Total	35,125	76			

a. Dependent Variable: DO

b. Predictors: (Constant), PDO

The results of the simple linear regression show that the Organizational Unlearning Practices variable is a strong predictor of the Organizational Performance variable, explaining 83.9% of the variance observed ($R^2=0.839$). The model showed high statistical significance ($p < 0.001$) which reinforces the reliability of the data obtained.

These data allow us to accept hypothesis H1 that organizational performance practices influence organizational performance.

Entered/Removed Variables

Model	Entered Variables	Variables Removed	Method
1	COM	.	Enter

a. Dependent Variable: DO

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,978	,956	,956	,14307

a. Predictors: (Constant), MCO

ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	33,590	1	33,590	1641,084	<,001
Residual	1,535	75	,020		
Total	35,125	76			

a. Dependent Variable: DO

b. Predictors: (Constant), MCO

We then analyzed the relationship between the organizational performance variable and organizational culture and checked it using a simple linear regression and the results indicate that the model is explanatory with high statistical significance ($F(1,75) = 1641.084$; $p < 0.001$), which shows that organizational culture has a strong explanatory capacity in relation to the dependent variable. The results show that organizational culture is positively related to organizational performance.

6. Discussions

The empirical results show that the hypotheses formulated and based on the literature, especially Tsang and Zahra (2008) were confirmed. A strong relationship was observed between unlearning practices and organizational performance, indicating that the more ports promote the conscious elimination of obsolete routines, procedures and beliefs, the higher the organization's performance tends to be.

In addition, organizational culture has also been shown to play an essential role in performance, which reinforces the importance of an organizational environment geared towards continuous learning, continuous innovation and the systematic discarding of obsolete practices.

Based on the data obtained from the 77 port managers of the ports of Lobito and Luanda, it was found that both organizational unlearning practices and organizational culture are positively associated with organizational performance; and, moreover, they are positively related to each other. Taken together, the results provide strong support for the proposed research model, demonstrating the robustness of the relationships between the variables studied and allowing hypotheses 1 and 2 to be confirmed.

7. Conclusions

Research indicates that unlearning is a phenomenon that can be studied in isolation from learning. It is therefore already possible to consider unlearning separately from organizational learning, since the organization can discontinue existing practices and routines without necessarily following through with the addition of a new routine (Holan and Philips, 2004; Tsang and Zhara, 2008).

This study has allowed us to conclude that both organizational unlearning practices and organizational culture have a significant and positive influence on the organizational performance of Angolan ports. These variables act as catalysts in the identification and elimination of obsolete routines, while at the same time providing the incorporation of more innovative practices and routines adapted to the current context.

The research hypotheses were empirically confirmed with statistically significant correlations between the constructs analyzed, which reinforces the interdependence between unlearning, organizational culture and performance.

In view of these findings, it is recommended that port managers invest in structured policies aimed at the systematic identification and elimination of obsolete routines, through clear procedures and objectives defined by management. When well understood and institutionally supported, these processes contribute significantly to strengthening innovation, competitiveness and sustainable performance.

7.1 Research Limitations

This study has limitations of various kinds, which must be taken into account when interpreting the results:

Firstly, it should be noted that only managers from the ports of Lobito and Luanda were interviewed, which is a geographical limitation of the sample. There is still no clear information on the possibility of alignment or divergence in the perceptions of the Ports of Cabinda and Namibe, which restricts the generalization of the findings for the Angolan port sector.

In addition, the sample size can be considered modest, considering the significant number of managers and employees working in different functional areas of the ports. This may limit the statistical representativeness and breadth of the analysis.

In addition, we believe that other relevant variables for understanding the perception of managers were not considered in this analysis, such as environmental changes, legislative changes or regulatory aspects that could have contributed to a more comprehensive and robust understanding of the phenomenon investigated.

7.2 Clues for Future Research

Future research could focus on more in-depth empirical studies, exploring, for example, managers' perceptions of organizational unlearning by analyzing the barriers to unlearning.

Another promising line of research involves analyzing the size and seniority of organizations in order to investigate how these variables influence resistance to change. Organizations with more entrenched practices and routines, due to their length of existence, may be more resistant to unlearning than newer, more flexible organizations.

We also suggest that studies be carried out to assess whether exposure to the external environment (international competition, regulation or technology) acts as an inducing factor for the creation of departments or internal mechanisms aimed at identifying and eliminating obsolete routines.

Finally, it is important to develop empirical research aimed at understanding how organizations are effectively unlearning management and operations practices. In this sense, it would be pertinent to apply the model of unlearning dimensions proposed by Yildiz (2020), which includes cognitive unlearning, behavioral unlearning and normative unlearning.

Acknowledgements

We would like to express our thanks to NECE for the institutional support and the conditions created for the development of this work, highlighting the academic and scientific environment provided which contributes to consolidating academic reflections.

We would also like to thank the anonymous reviewers for their constructive and useful comments.

AI declaration: This work has been reviewed using ChatGPT 2025 software to improve textual clarity and language (as the author of the article is not a native English speaker), as well as to correct grammatical and spelling errors. I declare that this software was not used at any time to create content for the research process. Its use was supervised and carefully reviewed by the author to ensure the accuracy and integrity of the information in this research. In addition, it should be noted that the article was reviewed after its completion using the international anti-plagiarism software Turnitin. We declare its use in a transparent, ethical and responsible manner, assuming full responsibility for the final content. We emphasize that there is no conflict of interest on the part of other parties involved.

Ethics declaration: We confirm that this article complies with the ethical principles of scientific research and is my own work. Whenever we have consulted works published by third parties, these have been clearly cited. We declare that this work and any part of it have not been previously submitted for any other purpose, evaluation or otherwise. We also confirm that we have obtained the informed consent of all persons involved in the work of this article, following the ethical guidelines of the school. We confirm that we have followed the Code of Conduct for Integrity while working on this manuscript.

Conflict of Interest Statement: We declare no conflict of interest.

References

- Akgün A.E.; Byrne J.C.; Lynn G.S.; Keskin H. 2007. *Organizational unlearning as changes in beliefs and routines in organizations*. Journal of Organizational Change Management, p. 794-812.
- Becker, K. 2018. *Organizational unlearning: time to expand our horizons?* LEARNING ORGANIZATION. p. 180-189.
- Cegarra-Navarro, J.; Wensley, A.; Batistic, S.; Evans, M. et al. 2021. [Minimizing the effects of defensive routines on knowledge hiding through unlearning.] Journal of Business Research, 137, p. 58-68.
- Chen J.; Ongono Emilienne Charlotte Z.; Yuan Y. 2024. *Organizational Unlearning: A Bibliometric Study and Visualization Analysis Via CiteSpace*. Sage Open.
- Dayan, M; Benedetto, CAD; Dayan, B; Al Rumaithi, E; Al Zahmi, R. 2024. *How much internationalization is innovation-worthy for SMEs? Roles of the degree of internationalization and organizational unlearning on the joint innovation capabilities-exploratory innovation relationship*. JOURNAL OF INNOVATION & KNOWLEDGE. 71, p.14214-14227.
- DE Holan, P.; Phillips, N. 2004. *Remembrance of things past? The dynamics of organizational forgetting*. Management Science, 50, p. 1603-1613.
- Duan, YL; Liu, YS; Sunguo, T; Liu, YS. 2023. *Organizational unlearning and service innovation of Chinese service-oriented firms: the moderating role of knowledge integration*. Asia Pacific Business Review.
- Hamza-Orlinska, A; Maj, J; Shantz, A; Vassilopoulou, J. 2024. *Unlearning diversity management*. Journal of World Business. 59 (2).
- Hedberg, B. *How organizations learn and unlearn*. 1981 In: Nystrom, P.C.; Starbuck, W.H. (editors). Handbook of Organizational Design: Adapting Organizations to Their Environment, Oxford University Press, Oxford, v. 1, p. 1-27.
- Howells, John; Scholderer, Joachim. 2016. *Forget unlearning? How an empirically unwarranted concept from psychology was imported to flourish in management and organization studies*. Management Learning, 47 (4) p. 443-463
- Klammer A.; Grisold T.; Nguyen N.; Hsu S.-W. 2024. *Organizational unlearning as a process: What we know, what we don't know, what we should know*. Management Review Quarterly.
- Klammer A.; Hora W.; Kailer N. 2023. *Opposites attract: How incumbents learn and unlearn in coopetitive relationships with start-ups*. Industrial Marketing Management, p. 85-97.
- Kmiecik, R. 2020. *Critical reflection and innovative work behavior: The mediating role of individual unlearning*. Personnel Review, 50(2), p. 439-459.
- Leal-Rodríguez, AL; Eldridge, S; Ariza-Montes, A; Morales-Fernández, EJ. 2019. *Understanding How Organizational Culture Typology Relates to Organizational Unlearning and Innovation Capabilities*. Journal Of The Knowledge Economy. 10 (4), p. 1497-1514.
- Li, TJ; Helian, ZW; Jin, XJ. 2024. *The organizational mechanism of new technology implementation: an empirical study in the Chinese construction industry*. Journal of Asian Architecture and Building Engineering.
- Maccioni, S; Ghiringhelli, C; Datteri, E. 2024. *Navigating the unlearning landscape: an organizational unlearning taxonomy and an outcome-centric model*. Learning Organization. 31 (6), p. 960-984.
- Manning, L; Morris, W; Birchmore, I. 2023. *Organizational unlearning: A risky food safety strategy? Comprehensive Reviews in Food Science and Food Safety*. 22 (3), p. 1633-1653.

- Pardim, V; Pinochet, L; Viana; de Souza. 2024. C. *Determining factors of individual and organizational unlearning in the generation and realization of ideas: a multigroup analysis from organizational structure*. *Innov Manag Rev*.
- Sharma, S; Lenka, U. 2022. *On the shoulders of giants: uncovering key themes of organizational unlearning research in mainstream management journals*. *Review Of Managerial Science*, p. 1599-1695.
- Sharma, Shubham; Lenka, Usha. 2022. Counterintuitive, Yet Essential: *Taking Stock of Organizational Unlearning Research Through a Scientometric Analysis (1976-2019)*. *Knowl Man Res Pract*.
- Srithika T.M.; Bhattacharyya S. 2009. *Facilitating organizational unlearning using appreciative inquiry as an intervention*. Vikalpa.
- Tsang, EWK; Zahra, SA. 2008. *Organizational unlearning*. *Human Relations*, p. 1435-1462.
- Wang X.; Lu Y.; Zhao Y.; Gong S.; Li B. 2013. *Organizational unlearning, organizational flexibility and innovation capability: An empirical study of SMEs in China*. *International Journal of Technology Management*, p. 132-155.
- Wang, XY; Liu, ZY; Li, JM; Lei, XF. 2023. *How organizational unlearning leverages digital process innovation to improve performance: The moderating effects of smart technologies and environmental turbulence*. *Technology In Society*. 75
- Wang, XY; Qi, Y; Zhao, YX. 2019. *Individual unlearning, organizational unlearning and strategic flexibility the down-up change perspective*. *Baltic Journal of Management*, p. 2-18.
- Wei, SC; Wang, LF; Jiang, WB; Feng, LW; Feng, TW. 2023. *How eco-control systems enhance carbon performance via low-carbon supply chain collaboration? The moderating role of organizational unlearning*. *Corporate Social Responsibility and Environmental Management*. 30 (5), p. 2536-2554.
- Xu, N; Wu, XB; Du, J; Li, SH. 2024. *Organizational unlearning: A process of tension imposition, integration, and splitting*. *European Management Review*, p. 443-458.
- Yildiz, HE; Fey, CF. 2010. *Compatibility and unlearning in knowledge transfer in mergers and acquisitions*. *Scandinavian Journal of Management*, p.448-456.
- Zhang Xiaojuan. 2008. *On how organizational culture impact its performance and competitiveness*. *International Conference on Industrial Cluster Development and Management*.
- Zhang, F; Zhu, L; Wang, JJ; Gao, RH. 2024. *Leveraging Cognitive Conflict and Organizational Unlearning for Digital Mastery in SMEs: Insights from Upper Echelons*. *IEEE Transactions on Engineering Management*. 71
- Zhang, QS; Zhang, YY; Feng, TW. 2024. *Impacts of paradox cognition and organizational unlearning on supply chain resilience: a perspective of paradox theory*. *Operations Management Research*. 17 (3), p. 1022-1038
- Zhao, ZY; Yan, YL. 2023. *The Role of Organizational Unlearning in Manufacturing Firms' Sustainable Digital Innovation: The Mechanism of Strategic Flexibility and Organizational Slack*. *SUSTAINABILITY*. 15 (13)

Appendix

Variables	Items	Contents
Organizational Unlearning Practices	PDO1	The organization continuously promotes the elimination of outdated routines.
	PDO2	The elimination of obsolete routines takes place in a structured and planned manner.
	PDO3	The organization recognizes the elimination of inefficient routines as positive and necessary.
	PDO4	Before eliminating processes, the organization carefully analyzes the impact on the bottom line.
	PDO5	Employees are trained to adopt new technological processes.
Organizational Performance	DO1	The new implementations contribute to greater operational efficiency.
	DO2	Customer satisfaction has increased with the adoption of new procedures.
	DO3	There was a significant reduction in accidents at work after the changes were implemented.
	DO4	The adoption of new routines has helped to reduce operating costs.
	DO5	The implementation of new procedures has made workers feel more valued.
Organizational Culture	CO1	The organization encourages employees to question established practices.
	CO2	Debates are held to assess the relevance of current processes.
	CO3	The organization offers training courses that encourage the abandonment of obsolete practices.
	CO4	Employee suggestions to replace obsolete practices are well received by the organization.