



The Role of Organizational Learning Culture in E-Commerce Adoption among SMEs: A Systematic Review

Li Kai Feng ^{a*}, Gary Tan Peng Liang ^b

^a*Malaysia University of Science and Technology (MUST), Block B, Encorp Strand Garden Office, No. 12, Jalan PJU 5/5, Kota Damansara, 47810 Petaling Jaya, Selangor, Malaysia*

^b*Wawasan Open University (WOU), 54, Jln Sultan Ahmad Shah, 10050 George Town, Penang, Malaysia*

^a*Email: li.kaufeng@phd.must.edu.my*

^b*Email: pengliang@must.edu.my*

Abstract

This systematic review aims to explore the influence of organizational learning culture on the adoption of e-commerce technologies among Small and Medium-sized Enterprises (SMEs). The rapid evolution of e-commerce has become a critical aspect of business success, especially for SMEs striving to compete in the global market. However, the adoption of such technologies is not merely a technical decision but is deeply rooted in the organizational culture. This review synthesizes research findings from a range of academic databases, employing rigorous selection criteria to ensure the relevance and quality of the sources. The methodology involves a comprehensive search and analysis of peer-reviewed articles, focusing on studies that explicitly link organizational learning culture with e-commerce adoption in the context of SMEs. The findings of this review highlight that a strong organizational learning culture significantly enhances the willingness and ability of SMEs to adopt e-commerce, facilitating a more agile and adaptive approach to technological change. Key themes identified include the role of leadership, knowledge sharing practices, and the openness to change within the organization. The review also discusses challenges faced by SMEs in cultivating such a culture and the implications for future research and practice.

Received: 1/1/2024

Accepted: 3/1/2024

Published: 3/11/2024

* Corresponding author.

In conclusion, the review underscores the critical role of organizational learning culture as a facilitator for e-commerce adoption in SMEs, offering insights into how SMEs can leverage their internal culture to navigate the digital business landscape effectively.

Keywords: Perceived Behavior Control Organizational Learning Culture; E-Commerce Adoption; Small and Medium-sized Enterprises (SMEs); Digital Transformation in SMEs; Organizational Culture and Technology.

1. Introduction

The advent of e-commerce has revolutionized the business landscape, offering an array of opportunities and challenges, especially for Small and Medium-sized Enterprises (SMEs). In an increasingly digital world, e-commerce provides SMEs with a platform to expand their market reach, enhance customer engagement, and compete in the global marketplace [1]. The ability to engage effectively in e-commerce is not merely a matter of technological implementation but hinges significantly on the broader organizational context, particularly the learning culture within an organization [2].

Organizational learning culture, defined as the values, practices, and processes that encourage and support continuous learning within an organization [3], plays a pivotal role in technology adoption. This culture influences how an organization perceives, values, and integrates new technologies into its business processes [4]. In the context of SMEs, where resources are often limited, the agility and willingness to learn and adapt can be critical determinants of successful e-commerce adoption [5] (Eilers and his colleagues, 2022).

This systematic review aims to explore the influence of organizational learning culture on the adoption of e-commerce technologies among SMEs. By synthesizing research findings from various academic sources, the review seeks to understand the extent to which organizational learning culture impacts the willingness and ability of SMEs to embrace e-commerce and the specific cultural attributes that facilitate or hinder this adoption.

The scope of this review is confined to studies that directly link organizational learning culture with e-commerce adoption in SMEs. The focus is on identifying and analyzing peer-reviewed articles and academic publications that provide empirical evidence or theoretical analysis of this relationship. The review acknowledges its limitations, including potential publication bias in the selected articles and the varying definitions and measurements of organizational learning culture across different studies. Additionally, the review primarily concentrates on SMEs, acknowledging that the findings may not be directly transferable to larger organizations or different contexts.

In conclusion, this introduction sets the stage for a comprehensive exploration of how organizational learning culture shapes e-commerce adoption in SMEs, offering valuable insights into the interplay between organizational culture and technological innovation in the contemporary business environment.

2. Methodology

The methodology of this systematic review is meticulously structured to investigate the influence of

organizational learning culture on e-commerce adoption among Small and Medium-sized Enterprises (SMEs). This exploration involves several key stages, which include defining the selection criteria for literature, conducting an extensive search across academic databases, carefully selecting pertinent studies, and methodically synthesizing the data extracted from these sources.

To ensure a thorough collection of relevant literature, the review process commenced with searches across multiple academic databases known for their expansive coverage of peer-reviewed articles in business, technology, and organizational studies. These databases include JSTOR, Scopus, Web of Science, Google Scholar, and EBSCOhost. The aim was to amass a comprehensive set of scholarly works that provide varied perspectives on the topic.

The literature search was driven by a set of carefully chosen keywords designed to capture studies relevant to the research focus. These keywords included phrases such as "e-commerce adoption," "SMEs," "organizational learning culture," "technology adoption in SMEs," and "digital transformation in small businesses." Boolean operators like "AND" and "OR" were employed to refine the search, allowing for a more focused retrieval of articles.

In terms of inclusion and exclusion criteria, the review targeted peer-reviewed articles published in English, with a particular focus on studies that specifically address SMEs and explore the relationship between organizational learning culture and e-commerce adoption. To ensure contemporary relevance, the review considered publications from the year 2000 onwards. Conversely, the review excluded non-peer-reviewed articles such as editorials and book reviews, studies not explicitly addressing SMEs or organizational learning culture, articles not available in full-text format, and duplicate studies across databases.

The initial search through the selected databases generated a preliminary list of articles. This list underwent a screening process where titles and abstracts were reviewed against the inclusion and exclusion criteria, leading to a refined list of potentially suitable articles. The full texts of these shortlisted articles were then thoroughly examined to confirm their relevance and suitability for the review, with those not meeting the criteria being excluded.

In the data extraction phase, essential information such as the authors, publication year, research objectives, methodologies employed, key findings, and conclusions were meticulously extracted from each selected study. This data was organized in a tabulated format to facilitate ease of comparison and synthesis. The subsequent data synthesis involved conducting a thematic analysis of the extracted data, focusing on identifying prevalent themes, patterns, and insights relating to the impact of organizational learning culture on the adoption of e-commerce in SMEs. This comparative analysis helped in understanding diverse perspectives and in drawing comprehensive conclusions from the literature.

To ensure the credibility and validity of the findings, a thorough quality assessment was carried out on the selected studies. This assessment scrutinized aspects such as research design, sample size, methods of data collection and analysis, and the robustness of the conclusions drawn in each study.

In conclusion, the methodology adopted for this systematic review was crafted to provide a thorough and rigorous analysis of the existing literature on the role of organizational learning culture in e-commerce adoption among SMEs. By adhering to strict selection criteria and implementing systematic processes for data extraction and synthesis, the review aims to contribute valuable insights and establish a solid foundation for future research in this domain.

3. Theoretical Framework

The theoretical background of the study on the role of organizational learning culture in e-commerce adoption among SMEs is underpinned by a diverse range of theories and models from the fields of organizational learning, technology adoption, and e-commerce. Each of these theoretical frameworks offers unique insights into the dynamics of how small and medium-sized enterprises (SMEs) adapt and embrace new technologies.

3.1 Organizational Learning Theories

Argyris and Schön's theory of organizational learning is seminal in this area, providing a distinction between single-loop and double-loop learning processes [6]. Single-loop learning involves basic error correction within existing frameworks, while double-loop learning challenges and changes fundamental organizational norms and values. This distinction is particularly relevant for SMEs adopting e-commerce technologies, as it implies a need for deeper, more transformative changes in organizational culture and practices. Peter Senge's concept of the learning organization further builds on this, emphasizing key elements such as systemic thinking, personal mastery, mental models, shared vision, and team learning [7]. Senge's model advocates for a holistic approach to learning and adaptation, suggesting that SMEs should foster an environment that encourages continuous learning and collaborative efforts, especially when adopting complex technologies like e-commerce.

3.2 Technology Adoption Models

Davis' Technology Acceptance Model (TAM) is crucial for understanding user behavior in the context of technology adoption [8]. TAM proposes that perceived usefulness and ease of use are primary determinants of how individuals accept and use new technologies. This model is applicable to SMEs to assess how their employees perceive and interact with e-commerce platforms.

Venkatesh and his colleagues's Unified Theory of Acceptance and Use of Technology (UTAUT) integrates several technology acceptance models, offering a more comprehensive framework. UTAUT identifies performance expectancy, effort expectancy, social influence, and facilitating conditions as key determinants of technology adoption [9]. This model helps in understanding the various factors that influence e-commerce adoption in SMEs.

3.3 E-Commerce in SMEs

Roger's Diffusion of Innovations theory provides insights into how new technologies like e-commerce are adopted within organizations. This theory identifies five key factors – relative advantage, compatibility,

complexity, trialability, and observability – that influence the adoption process [10]. These factors are crucial for SMEs to consider when implementing e-commerce technologies. The Resource-Based View (RBV) of the firm offers a perspective on how internal resources, including organizational learning culture, contribute to a firm's competitive advantage in e-commerce [11]. RBV suggests that resources that are valuable, rare, inimitable, and non-substitutable can provide a sustainable competitive edge, which is particularly relevant for SMEs navigating the digital marketplace.

3.4 Previous Systematic Reviews and Meta-Analyses

Previous systematic reviews and meta-analyses in this domain have provided valuable insights. For example, a meta-analysis by Williams and his colleagues collated findings from various studies on technology adoption models, elucidating factors that influence technology adoption in organizations, including SMEs.

The array of studies reviewed provides an in-depth understanding of organizational learning and its pivotal role in shaping dynamic capabilities, fostering innovation, and steering strategic changes within organizations. Each study, while contributing valuable insights, also brings to light specific areas that warrant further scrutiny and critical evaluation.

Reference [12] research introduces a comprehensive framework to comprehend dynamic capabilities within Japan's and China's manufacturing sectors. Reference [13] strive to bridge the knowledge gap in harnessing value from emergent technologies, particularly artificial intelligence. Reference [14] addresses the prevalent manufacturing bias in innovation research. Reference [15] delves into the complex and paradoxical nature of organizational learning. [16] innovatively link organizational learning and absorptive capacity with green innovation. Reference [16] focus on the convergence of business sustainability and organizational learning. Reference [17]. offer strategies for using organizational learning as a tool for managing change. Reference [18] focus on the precursors of radical innovation. Farrell and his colleagues. (2022) emphasize the role of research-practice partnerships in facilitating organizational learning. Lastly, [19] proposes a framework for Circular Economy (CE) practices.

In conclusion, these studies collectively highlight the complex and multifaceted nature of organizational learning and its vital importance in the realms of innovation, development of dynamic capabilities, and strategic change within organizations. There remains a consistent need for wider empirical evidence, consideration of diverse contexts, and practical applications of the theoretical frameworks presented. Future research endeavors should address these gaps, offering more inclusive and universally applicable findings that can effectively guide organizations across different sectors and regions in their pursuit of growth and adaptation in an ever-evolving business environment.

4. Findings

In the realm of Small and Medium-sized Enterprises (SMEs), the adoption of e-commerce is significantly influenced by the underlying organizational learning culture, as revealed by this systematic review. The study's findings, organized thematically, shed light on the multifaceted ways in which organizational learning culture

shapes the e-commerce landscape for SMEs.

A critical factor that emerges in the adoption of e-commerce is the role of leadership. Studies have consistently highlighted the importance of leaders who are committed to fostering a learning and innovative environment. This type of leadership significantly shapes the organization's approach to e-commerce adoption. Leaders with a visionary outlook, who understand digital trends and e-commerce dynamics, are particularly influential. Such leaders are not just knowledgeable about e-commerce but are also adept at instilling a vision that synchronizes with digital advancements. This aspect of leadership is crucial for guiding SMEs through the complex process of digital transformation. Another key theme is the significance of knowledge sharing within organizations. SMEs that champion a culture of information sharing and collaborative learning are better poised for effective e-commerce adoption. Collaborative learning activities, including workshops, team discussions, and shared digital platforms, are instrumental in disseminating e-commerce knowledge and skills throughout the organization. This approach ensures a more inclusive and informed strategy towards digital adoption, fostering a learning environment where everyone is part of the digital journey.

Organizational learning culture is often characterized by an openness to change, a vital attribute for embracing e-commerce. SMEs that demonstrate flexibility and openness to new ideas are found to adapt more swiftly to the evolving digital commerce environment. Emphasizing an innovative mindset within SMEs, where risk-taking and experimentation are nurtured, is pivotal. This environment is conducive to e-commerce adoption as it necessitates moving beyond traditional business models to embrace innovative online strategies. Access to and availability of technological infrastructure emerge as significant factors in e-commerce adoption. SMEs ingrained with a learning culture tend to invest in and regularly update their technological resources, which eases the integration of e-commerce platforms. Furthermore, ongoing technical support and training are crucial in equipping employees to effectively manage e-commerce systems. This ensures that the adoption of technology is not merely a decision imposed from the top but a process involving employees at all levels.

Despite these benefits, SMEs encounter challenges in developing a learning culture conducive to e-commerce adoption. Common barriers include limited resources, resistance to change, and a lack of digital literacy. To overcome these challenges, strategic planning and resource allocation are essential. This strategy encompasses investing in employee training, fostering a culture of innovation, and seeking external support. The aggregation of findings from the literature indicates a robust correlation between a well-established organizational learning culture and successful e-commerce adoption in SMEs. Integral to this culture are elements such as visionary leadership, collaborative learning environments, openness to change, and robust technological infrastructure, coupled with the ability to navigate various challenges. Collectively, these themes provide a comprehensive picture of how SMEs can leverage their internal culture to capitalize on e-commerce opportunities, leading to enhanced competitiveness and growth in the digital marketplace.

5. Findings

The findings of this systematic review, which focus on the role of organizational learning culture in e-commerce adoption among SMEs, align with and expand upon existing literature in several key areas. This discussion

interprets these findings, explores their implications for theory and practice, identifies limitations, and suggests directions for future research.

The importance of leadership and vision in cultivating a learning culture, as highlighted in this review, resonates with the principles outlined in Senge's learning organization theory [20]. This theory emphasizes that leaders play a critical role in shaping a culture that embraces learning and innovation, which is essential for e-commerce adoption in SMEs. Additionally, the theme of knowledge sharing and collaborative learning [21] model of knowledge creation, emphasizing that socialization and externalization are key processes in organizational learning. This model supports the finding that collaborative learning processes enhance the capacity of SMEs to adopt e-commerce.

The emphasis on openness to change and innovation in organizational learning culture aligns with Rogers' Diffusion of Innovations theory (Rogers, 2003), which posits that openness to new ideas is critical for the adoption of technological innovations. This review extends this theory by specifically linking it to e-commerce adoption in SMEs. Furthermore, the importance of technological infrastructure and support found in this review reflects the assertions of the Technology Acceptance Model (TAM) by [22], where ease of use and perceived usefulness are crucial for technology adoption.

The review's findings have significant implications for both academic theory and practical application. Theoretically, it contributes to the body of knowledge on organizational learning by providing empirical evidence linking learning culture to e-commerce adoption in SMEs. This extends existing theories by demonstrating how they apply in the context of digital transformation. For practitioners, especially SME leaders, this review highlights the importance of cultivating a learning culture that supports e-commerce adoption. It underscores the need for leadership that is visionary and supportive of innovation and change. The review also emphasizes the importance of investing in technological infrastructure and fostering an environment conducive to knowledge sharing.

Despite the insights provided, there are limitations in the current research. Many studies focus on specific contexts or regions, limiting their generalizability. Additionally, the majority of the literature relies on qualitative data, which while rich in detail, may lack the statistical rigor of quantitative analyses. There is also a lack of longitudinal studies that examine how the adoption of e-commerce evolves over time in relation to changes in organizational learning culture.

Given these limitations, several areas for future research emerge. There is a need for more empirical studies that use quantitative methods to validate the findings of this review. Longitudinal studies would provide a deeper understanding of how the relationship between organizational learning culture and e-commerce adoption evolves over time. Comparative studies across different regions and industries would also enhance the generalizability of the findings. Finally, future research could explore the role of specific components of organizational learning culture, such as leadership styles or knowledge management practices, in greater detail to understand their specific impact on e-commerce adoption.

This review contributes to a nuanced understanding of the relationship between organizational learning culture and e-commerce adoption in SMEs. It highlights the pivotal role of leadership, knowledge sharing, openness to change, and technological support in this process. By identifying limitations and suggesting future research directions, this study lays the groundwork for further exploration into this vital area, offering valuable insights for both academics and practitioners in the field of SME digital transformation.

The systematic review conducted in this study provides an extensive exploration of how organizational learning culture influences the adoption of e-commerce among Small and Medium-sized Enterprises (SMEs). It uncovers several critical areas that play a significant role in this process: the effect of leadership and vision, the importance of knowledge sharing and collaborative learning, the necessity for openness to change and innovation, the requirement for robust technological infrastructure and support, and the identification of challenges and barriers in cultivating a conducive learning culture for embracing e-commerce.

The significance of leadership and vision cannot be overstated. The review reveals that the success of e-commerce initiatives in SMEs transcends mere technological adoption. It crucially hinges on the strategic direction and support provided by the leaders. Visionary leaders who are committed to fostering a learning culture can significantly enhance the organization's readiness and enthusiasm for e-commerce.

Furthermore, the review highlights the importance of knowledge sharing and collaborative learning environments. These settings allow for a more effective adoption and utilization of e-commerce by SMEs. Encouraging open communication and teamwork is essential for SMEs to manage the complexities of digital transformation successfully.

Another key finding pertains to the openness to change and innovation within an organization. The review underscores that an organizational culture that embraces change and innovation is pivotal for SMEs to keep pace with the rapidly evolving digital marketplace. Such a culture aids in navigating through the new terrains of online business.

In terms of technological infrastructure, the review identifies the necessity of having access to and investment in up-to-date technological resources. This, coupled with ongoing support and training, is vital for a smooth integration of e-commerce platforms in SMEs. It ensures that employees are well-equipped to handle these systems effectively, thereby facilitating the digital transition.

However, the journey is not without its challenges. The review points out common obstacles such as limited resources, resistance to change, and gaps in digital literacy. It emphasizes the need for strategic planning and resource allocation to address these barriers effectively.

This systematic review contributes significantly to existing knowledge by synthesizing research that links organizational learning culture to e-commerce adoption in the SME context. It extends current theories of organizational learning and technology adoption to the unique scenarios faced by SMEs in the digital era. Not only does it consolidate current understanding, but it also identifies gaps in existing research, paving the way for future studies.

Based on these findings, several recommendations for practitioners, especially SME leaders and managers, emerge. Leaders are encouraged to develop a clear and forward-looking vision for digital transformation and e-commerce adoption. This vision should be in harmony with the overall business strategy and organizational culture.

The review also suggests the implementation of mechanisms to facilitate knowledge sharing related to e-commerce within the organization. Regular workshops, training sessions, and collaborative digital platforms can be effective tools in this endeavor.

Organizational cultures that are open to experimentation and adaptable to change are also encouraged. This goes beyond simply adopting new technologies to involve a willingness to alter business processes and practices in line with digital innovations.

Investment in technological infrastructure and employee training is crucial and should be regarded as an integral part of the organization's growth strategy. Additionally, developing targeted strategies to overcome barriers to e-commerce adoption is recommended. This may involve seeking external expertise, leveraging government or industry resources, and focusing on building digital literacy among employees.

In conclusion, this review underscores the intricate relationship between organizational learning culture and e-commerce adoption in SMEs. It highlights how internal culture can be leveraged to effectively navigate the challenges and capitalize on the opportunities presented by e-commerce. The insights and recommendations provided are aimed at guiding SMEs to harness their internal resources and capabilities for successful digital transformation, ultimately leading to growth and competitiveness in the digital marketplace.

References

- [1]. E. E. Grandon and J. M. Pearson, "Electronic commerce adoption: An empirical study of small and medium US businesses," *Information & Management*, vol. 42, no. 1, pp. 197–216, 2004. [Online]. Available: [https://doi.org/10.1016/S0378-7206\(03\)00095-5](https://doi.org/10.1016/S0378-7206(03)00095-5)
- [2]. H.-Y. Hsu, F. H. Liu, H.-T. Tsou, and L.-J. Chen, "Openness of technology adoption, top management support and service innovation: a social innovation perspective," *Journal of Business & Industrial Marketing*, vol. 34, 2018. [Online]. Available: <https://doi.org/10.1108/JBIM-03-2017-0068>
- [3]. V. J. Marsick and K. E. Watkins, "Demonstrating the Value of an Organization's Learning Culture: The Dimensions of the Learning Organization Questionnaire," *Advances in Developing Human Resources*, vol. 5, no. 2, pp. 132–151, 2003. [Online]. Available: <https://doi.org/10.1177/1523422303005002002>
- [4]. K. J. Klein and J. S. Sorra, "The challenge of innovation implementation," *Academy of Management Review*, vol. 21, no. 4, pp. 1055–1080, 1996. [Online]. Available: <https://doi.org/10.5465/amr.1996.9704071863>
- [5]. K. Eilers, C. Peters, and J. M. Leimeister, "Why the agile mindset matters," *Technological Forecasting and Social Change*, vol. 179, 121650, 2022. [Online]. Available: <https://doi.org/10.1016/j.techfore.2022.121650>

- [6]. C. Argyris and D. A. Schön, *Organizational Learning: A Theory of Action Perspective*. Reading, MA: Addison-Wesley, 1978.
- [7]. P. M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York, NY: Currency Doubleday, 1990.
- [8]. F. D. Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319–340, 1989.
- [9]. V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly*, vol. 27, no. 3, pp. 425–478, 2003.
- [10]. E. M. Rogers, *Diffusion of Innovations*, 5th ed. New York, NY: Free Press, 2003.
- [11]. J. Barney, "Firm Resources and Sustained Competitive Advantage," *Journal of Management*, vol. 17, no. 1, pp. 99–120, 1991.
- [12]. M. D. Williams, N. P. Rana, and Y. K. Dwivedi, "The Unified Theory of Acceptance and Use of Technology (UTAUT): A Literature Review," *Journal of Enterprise Information Management*, vol. 28, no. 3, pp. 443–488, 2015.
- [13]. P. A. Smith and M. Fischbacher, "The Changing Nature of Risk and Risk Management: The Challenge of Borders, Uncertainty, and Resilience," *Risk Management*, vol. 11, no. 1, pp. 1–12, 2009.
- [14]. J. Yujie, "How Was The Dynamic Capability Constructed in China's Private Manufacturing Enterprises? A Case Study of Geely Auto," 2019.
- [15]. A. N. Mishra and A. K. Pani, "Business Value Appropriation Roadmap for Artificial Intelligence," 2020. (IF: 3)
- [16]. F. Koster, "Organisational Antecedents of Innovation Performance: An Analysis Across 32 European Countries," *International Journal of Innovation Management*, 2020.
- [17]. N. Meisinger, "On Dialectics in Theorizing: The Contingent Nature of Organizational Learning," *International Journal of Organizational Analysis*, 2020.
- [18]. R. Cui, J. Wang, Y. Xue, and H. Liang, "Interorganizational Learning, Green Knowledge Integration Capability and Green Innovation," *European Journal of Innovation Management*, 2020. (IF: 3)
- [19]. V. Hermelingmeier and T. Wirth, "The Nexus of Business Sustainability and Organizational Learning: A Systematic Literature Review to Identify Key Learning Principles for Business Transformation," *Business Strategy and the Environment*, 2021. (IF: 3)
- [20]. J. You, J. Kim, and D. H. Lim, "Organizational Learning and Change," *Research Anthology on Digital Transformation*, ..., 2021.
- [21]. E. Domínguez-Escrig and F. F. Mallén-Broch, "Leadership for Sustainability: Fostering Organizational Learning to Achieve Radical Innovations," *European Journal of Innovation Management*, 2021.
- [22]. C. C. Farrell, W. Penuel, A. Allen, E. R. Anderson, A. Bohannon, C. Coburn, and S. Brown, "Learning at The Boundaries of Research and Practice: A Framework for Understanding Research–Practice Partnerships," *Educational Researcher*, 2022. (IF: 3)
- [23]. S. Ul-Durar, U. Awan, A. Varma, S. Memon, and A. Mention, "Integrating Knowledge Management and Orientation Dynamics for Organization Transition from Eco-innovation to Circular Economy," *Journal of Knowledge Management*, 2023. (IF: 3)