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Synthesizing Digital Transformation and Knowledge Management to Drive SME Organization

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ABSTRACT

This study explores the synthesis of knowledge management (KM) and digital transformation (DT) as performance and sustainability drivers in small and medium-sized enterprises (SMEs). Systematically review 37 Scopus-indexed articles, the study finds significant topics, methods, and concerns in utilizing KM and DT to drive organizational resilience, innovation, and flexibility. The study discovers that KM activities like knowledge sharing and digital capability development are critical enablers of DT initiatives, ensuring operational efficiency and innovation. Similarly, DT boosts KM through the enabling of technological platforms for the transfer and use of knowledge. The study also discovers challenges such as resource constraints, skill deficiencies, and resistance to change and provides practical recommendations to mitigate these challenges. Practical recommendations point to strategic alignment, policy support, and sustainability-driven strategies in advancing SME growth in uncertain environments. This incorporation enriches literature by formulating an all-encompassing KM and DT synergy concept, guiding stakeholders on how to create effective strategies for organizational development.

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1. INTRODUCTION

Small and medium-sized businesses (SMEs) face both possibilities and challenges in the quickly evolving digital environment of today in order to remain competitive and sustainable. With the increasing reliance on technology and the extensive availability of digital tools, digital transformation (DT) has emerged as a critical strategy to enhance business efficiency [1], customer experience, and innovation [2]. However, the success of digital transformation is largely based on how organizations manage their knowledge assets, and as such [3]–[5], the integration of knowledge management (KM) and DT is a relevant research area.

Knowledge management, which encompasses creating, storing, sharing, and applying knowledge, is a base for organizational learning and innovation. SMEs, which are prone to work with limited resources, should optimize the impact of KM practices in managing digital challenges [6]. To help SMEs adapt to shifting market conditions and take advantage of new opportunities, DT offers the technological platform necessary to automate these

knowledge-gathering operations [7], [8]. Synergism of KM and DT can transform SMEs into agile and knowledge firms that can gain long-term growth within competitive markets.

Despite mounting evidence of the importance of the intersection of KM and DT, there remains disjointed literature, with single studies preferring to focus on the specifics of each domain. There is no integrated view yet of how these two dimensions interact and drive SME performance. This gap in the literature emphasises the necessity of doing a thorough analysis of the empirical research in order to find trends, best practices, and practical guidance.

By performing a comprehensive review of 37 empirical papers on the integration of KM and DT inside SMEs that are indexed by Scopus, this research seeks to close this gap. By this integration, the study aims to answer the following questions: (1) What are the key strategies for the integration of KM and DT within SMEs? (2) What are the impediments SMEs face in this integration, and how can they be surmounted? (3) What are the consequences of effective deployment of KM and DT on organizational performance and sustainability?

2. LITERATURE REVIEW

2.1 Knowledge Management in SMEs

The methodical process of producing, preserving, sharing, and utilising knowledge inside a company to improve productivity and creativity is known as knowledge management. The dynamic interaction between implicit and explicit knowledge, which is necessary for organisational learning and decision-making, is highlighted by theoretical models like Nonaka's Knowledge Spiral Model (SECI model) [9]–[11]. KM is particularly important in the context of SMEs due to their constrained resource base and informal organizational structures. KM practices allow SMEs to leverage existing knowledge assets, enhance problem-solving capabilities, and promote innovation even with limited financial or technological resources [12]. Empirical evidence suggests that KM improves operational effectiveness, eliminates redundancy, and promotes collaboration within an organization, thereby building organizational resilience. Yet, SMEs often face challenges such as inadequate technological infrastructure, low KM capability, and resistance to knowledge sharing that impede the successful implementation of KM strategies.

2.2 Digital Transformation in SMEs

The use of digital technologies to radically alter organisational culture, customer experiences, and business processes is known as digital transformation. Technologies like cloud computing, big data analytics, artificial intelligence, and the Internet of Things (IoT) are essential for enabling SMEs to streamline operations and effectively meet market demands [13], [14]. The resource-based theory (RBT) of the firm is emphatic to highlight that digital transformation can allow SMEs to develop unique capabilities that result in competitive advantage. By embracing digital technologies, SMEs can streamline business processes, automate mundane tasks, and gain data-driven insights, thereby enhancing decision-making and customer satisfaction. Despite these benefits, the majority of SMEs encounter obstacles in their digital transformation, such as lack of funding, a lack of digital expertise, and opposition to change [15], [16].

2.3 Research Gap and Contribution

While there is a body of literature on KM and DT separately, there is limited research on their integration in SMEs. Most of the literature addresses large organizations, and as a result, there is a knowledge gap on the integration of KM and DT in SMEs with their distinctive features and constraints for development. This study bridges this gap with the systematic integration of empirical studies, offering practical implications along with a comprehensive

framework for KM and DT integration in SMEs.

3. RESEARCH METHODS

The study's design is based on systematic literature review methodology that combines qualitative content analysis with quantitative assessment of publication trends. The literature review was done on empirical studies indexed by the Scopus database, a credible source of peer-reviewed scholarly publications. This ensures inclusion of high-quality, relevant, and diverse studies across disciplines such as business management, information systems, and organizational studies. A Scopus search was conducted on April 28, 2024 using a combination of keywords represented by knowledge management (KM), digital transformation (DT), and small and medium enterprises (SMEs). The relevant words included words such as "knowledge management," "digital transformation," "small and medium-sized enterprises," and their combinations, which were also screened with Boolean operators (AND, OR) in order to achieve sufficient coverage. 62 documents were found that had the composition as illustrated in Figure 1.

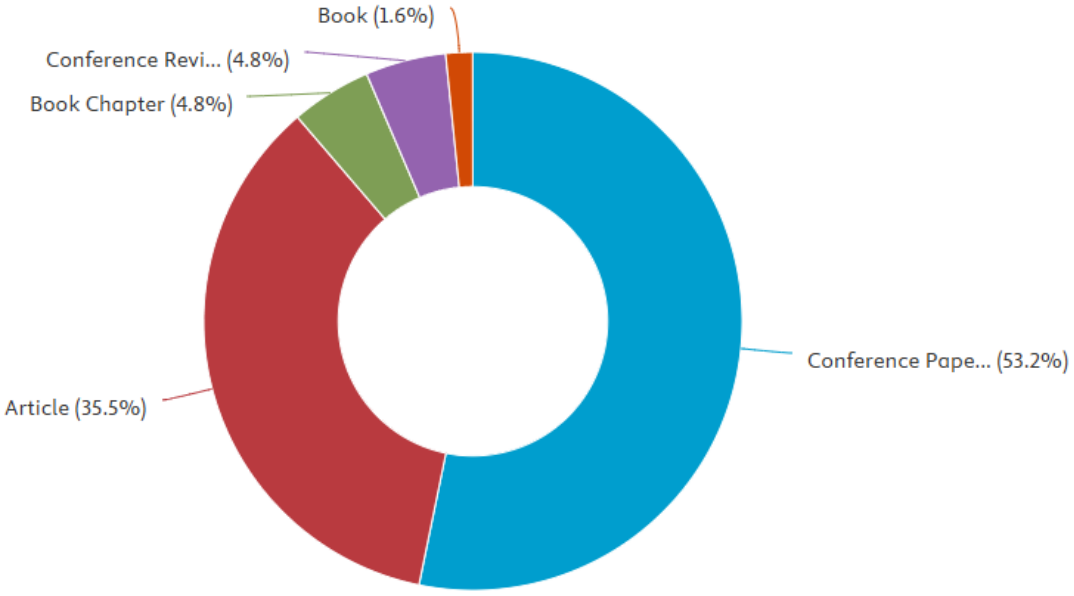

Figure 1. Data Collection

The diagram indicates the types of documents that have been included in the systematic review, presenting the diversity of sources employed to research the integration of digital transformation (DT) and knowledge management (KM) within SMEs. A majority of the sources (53.2%) were conference proceedings, as an indication of the proximity of recent research and current research debate within scientific journals. Journal articles, at 35.5%, are good predictors of expert research that has been subjected to the peer review process. Book chapters (4.8%) and conference reviews (4.8%) are add-ins that provide supporting or counter-point views to literature, while books (1.6%) constitute full reviews. The diverse distribution provides full insight into the subject matter, including theoretical models, empirical facts and practical experience. This combination fortifies the strength of systematic reviews by being able to accommodate various settings and scholarly contributions. For relevance, inclusion criteria utilized were: English language articles published in the last decade, empirical studies on SMEs, studies on synergizing KM and DT, and journal articles that are peer-reviewed. Figure 2 demonstrates how the 37 documents were screened.

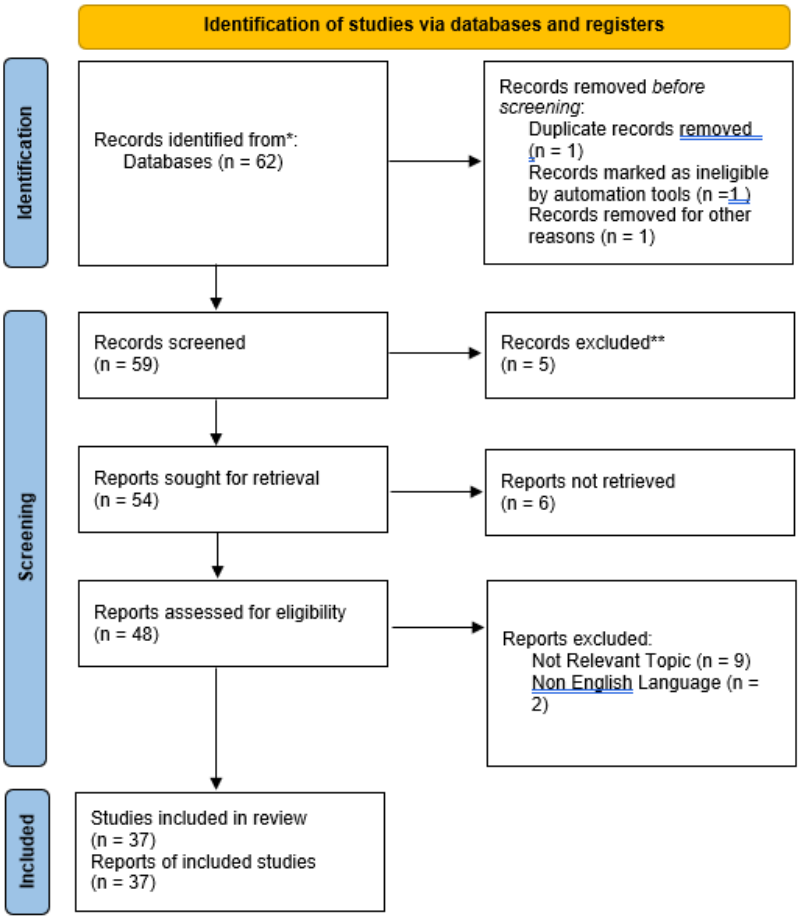

Figure 2. PRISMA Diagram

The simplified PRISMA diagram in Figure 2 shows that of the 62 studies identified through the database, 3 were removed before screening due to duplication and other reasons, leaving 59 studies to be screened. After the initial screening process, 5 studies were excluded and 54 reports continued to be retrieved, but 6 reports were not retrieved. A total of 48 reports were then evaluated for eligibility, with 11 reports excluded due to irrelevance (9) or non-English language (2). Finally, 37 studies met the criteria and were included in the systematic review.

Table 1. Paper Identifications

No	Tittle	Author's	Source
1	The impact of adoption of digital innovation dynamics in reduce work exhaustion in SMEs in developing countries: the case of cloud offshoring services	[17]	VINE Journal of Information and Knowledge Management Systems, 55(1), pp. 113–134
2	Exploring digital transformation strategy to achieve SMEs resilience and antifragility: a systematic literature review	[18]	Journal of Small Business and Entrepreneurship, 37(3), pp. 495–524
3	Exploring cloud enterprise resource planning and open innovation for small and medium enterprises: Insights from practitioners	[19]	Journal of Open Innovation: Technology, Market, and Complexity, 10(4), 100418

No	Tittle	Author's	Source
4	Untangling cross-border interfirm effects in SMEs' working capital financing: A cyber-behavioral signaling perspective	[20]	International Journal of Production Economics, 274, 109320
5	Government policy, IT capabilities, digital transformation, and innovativeness in Post-Covid context: case of Vietnamese SMEs	[16]	International Journal of Organizational Analysis, 32(2), pp. 333–356
6	Analysis of the Effectiveness of Technological KM Tools in the SME Sector Using the DEA Model	[21]	Proceedings of the European Conference on Knowledge Management, ECKM, 2024-September, pp. 902–909
7	The Impact of Knowledge Management on Digital Innovation in Time of Covid-19 Pandemic: The Role of Digital Capability and Digital Orientation	[22]	WSEAS Transactions on Business and Economics, 21, pp. 1276–1285
8	Unveiling the relationships between visibility, information technologies and innovation management for sustainability performance: an empirical study	[23]	European Journal of Innovation Management
9	Enhancing SMEs' Resilience: The Role of Sharia Fintech Service and Knowledge Sharing	[24]	Lecture Notes in Networks and Systems, 923 LNNS, pp. 504–516
10	Managing Technological Innovation: Dynamic Capabilities, Collaborative Innovation, and Born-Digital SMEs' Performance	[25]	IEEE Transactions on Engineering Management, 71, pp. 6986–6991
11	The impact of work viewed management on SMEs' performance during the COVID-19 pandemic: Assessing the significance of KM	[26]	Knowledge and Performance Management, 7(1), pp. 76–90
12	Current State and Further Direction of Digital Knowledge Management in Small and Medium Enterprises	[27]	Proceedings of the European Conference on Knowledge Management, ECKM, 1, pp. 284–292
13	Technological Tools, KM and Innovation in SMEs	[28]	Proceedings of the European Conference on Knowledge Management, ECKM, 1(2), pp. 1462–1470
14	The Importance of Digital Readiness on Manufacturing SMEs' Performance Aiming Towards Industry 4.0: A Case Study	[29]	Lecture Notes in Mechanical Engineering, pp. 630–639
15	A Framework for Knowledge Management System Adoption in Small and Medium Enterprises	[30]	Computers, 11(9), 128
16	Digital platforms and international performance of Italian SMEs: an exploitation-based overview	[31]	International Marketing Review, 39(3), pp. 568–585
17	Concept on using visual and tactile sensors for knowledge management in manual manufacturing processes	[32]	Procedia CIRP, 112, pp. 186–190

No	Tittle	Author's	Source
18	The Indonesia Triple Helix Digital Platform Model in Knowledge Sharing for Product Innovation Collaboration	[33]	DESIDOC Journal of Library and Information Technology, 42(3), pp. 191–200
19	Digital Transformation and Innovation Performance of High-Tech SMEs: Evidence from the Internet Big Data	[34]	ACM International Conference Proceeding Series, pp. 62–66
20	Sustainable development in the digital age of entrepreneurship	[35]	Sustainability (Switzerland), 13(9)
21	Knowledge management and eco-innovative service packages for SMEs	[36]	Proceedings of the European Conference on Knowledge Management, ECKM, pp. 170–178
22	Assessing the role of knowledge management to enhance or prevent digital transformation in SMEs: Critical knowledge factors required	[37]	2020 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD), 9380393
23	Digital strategies and organizational performances of SMEs in the age of coronavirus: Balancing digital transformation with an effective business resilience	[38]	Law and Economics Yearly Review, 8, pp. 347–380
24	Are SMEs Ready for Industry 4.0 Technologies: An Exploratory Study of 4.0 Technological Impacts	[39]	Proceedings of International Conference on Computation, Automation and Knowledge Management, ICCAKM 2020, pp. 203–208, 9051150
25	The appropriation of blockchain for small and medium-sized enterprises	[40]	Journal of Innovation Management, 7(1), pp. 26–45
26	"COMODA" model to support collaboration and innovation between digital innovation labs and SMEs	[41]	Proceedings of the European Conference on Knowledge Management, ECKM, 1, pp. 151–159
27	Towards digital knowledge transfer in small and medium-sized manufacturing enterprises	[42]	CEUR Workshop Proceedings, 2348, pp. 249–256
28	Connecting academia and small enterprises: A new field for Knowledge Management Experiments	[43]	Proceedings of the International Conference on Intellectual Capital, Knowledge Management and Organisational Learning, ICICKM 2018, November, pp. 30–39
29	Does investment in digital technologies yield digital business value? The digital investment paradox and knowledge creation as enabling capability	[44]	ICKE 2018 - Proceedings of the 10th Int. Joint Conference on Knowledge Discovery, Knowledge Engineering, and Knowledge Management, 3, pp. 208–215
30	Knowledge management to compete in the digital era: Skills evolution of enterprise systems	[45]	Proceedings of the European Conference on Knowledge Management, ECKM, 2, pp. 733–740
31	Designing user interfaces for curation technologies	[46]	Lecture Notes in Computer Science, 10273 LNCS, pp. 388–406
32	Designing innovative digital technologies for knowledge management and data-driven business: A case study	[47]	ACM International Conference Proceeding Series, 22-23 October 2015, 018

No	Tittle	Author's	Source
33	Information technology for small businesses: Managing the digital enterprise	[48]	Information Technology for Small Business: Managing the Digital Enterprise, 9781464304407, pp. 1–120
34	Conversations with the marketplace: An application of design thinking and sociodrama action methods in an innovation workshop	[49]	International Journal of Innovation Science, 4(2), pp. 77–87
35	Examining IT outsourcing decisions and practices of small and medium enterprises in Malaysia	[50]	Innovation and Knowledge Management in Twin Track Economies –IBIMA 2009, 13, pp. 797–801
36	ICT adoption and development by the SME sector in Malaysia	[51]	Creating Global Economies through Innovation and Knowledge Management – IBIMA 2009, 13, pp. 1300–1317
37	A knowledge management platform for supporting digital business ecosystems based on P2P and SOA technologies	[52]	Proceedings of the 2007 Inaugural IEEE-IES Digital Ecosystems and Technologies Conference, DEST 2007, pp. 196–202, 4233740

4. RESULTS AND DISCUSSION

4.1 Results

This section synthesizes findings from 37 Scopus-indexed articles, integrating insights from various studies to illuminate the interplay between knowledge management (KM) and digital transformation (DT) in driving SMEs organizational performance. The results are organized around key thematic dimensions that emerged from the literature, followed by a discussion contextualizing the findings.

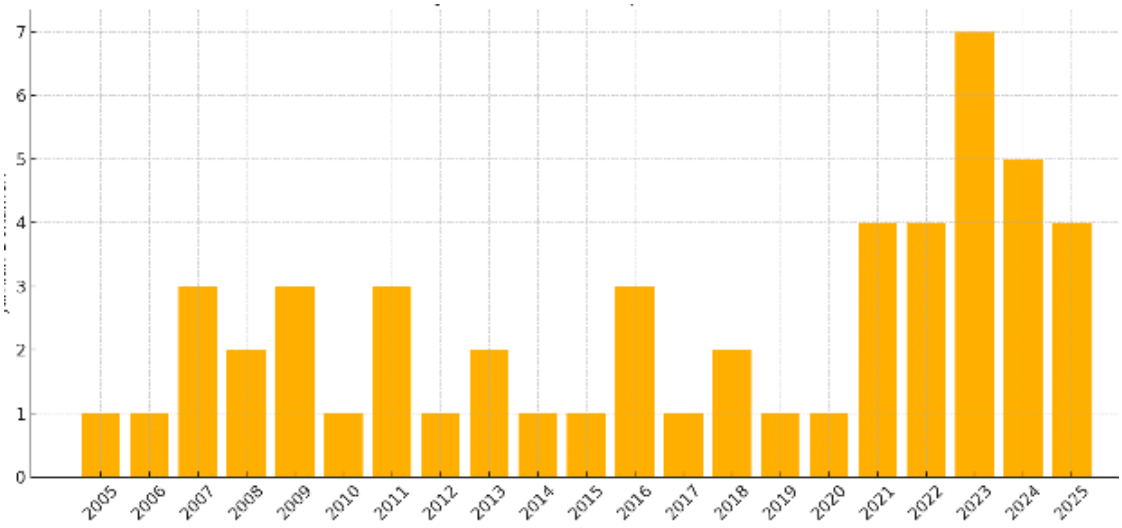

Figure 3. Trend Years Paper

Figure 3 displays the number of documents per annum, showing the development of research on the confluence of knowledge management (KM) and digital transformation (DT) in SMEs over the years. The evidence reflects a tremendous increase in publications from the year 2021, with the highest number of documents in 2023. This trend illustrates the growing importance of KM and DT as a reaction to digital progress and turbulence provoked by recent global events, e.g., the COVID-19 pandemic, which heightened the need for nimble and robust business functions. The earlier years, namely 2005-2010, exhibit a more sporadic contribution, indicating that the

topic was less prominent at that time. The steady rise in the number of publications in the last five years indicates the increased interest and necessity to address KM and DT integration to help SMEs deal with a dynamic business landscape.

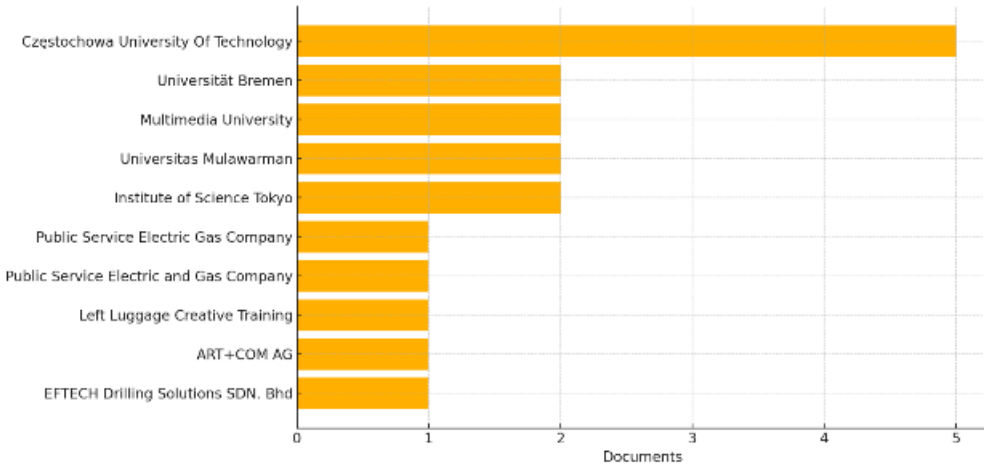

Figure 4. Affiliation Contributions

Figure 4 of institution documents involved in research on Knowledge Management (KM) integration and Digital Transformation (DT) in SMEs. Częstochowa University of Technology is in the lead with the highest of five documents, indicating its leadership in this aspect. It is followed by Universität Bremen, Multimedia University, Universitas Mulawarman, and the Institute of Science Tokyo, each providing two documents, indicating a world-wide spread of academic interest between Europe and Asia. Other organizations such as Public Service Electric and Gas Company, ART+COM AG, and EFTECH Drilling Solutions provided one document, while even though limited in quantity, bring in diversification to the debate. This allocation means that while the topic has garnered international attention, there is still much room for long-term institutional coordination to support and expand research on KM and DT integration in the case of SMEs.

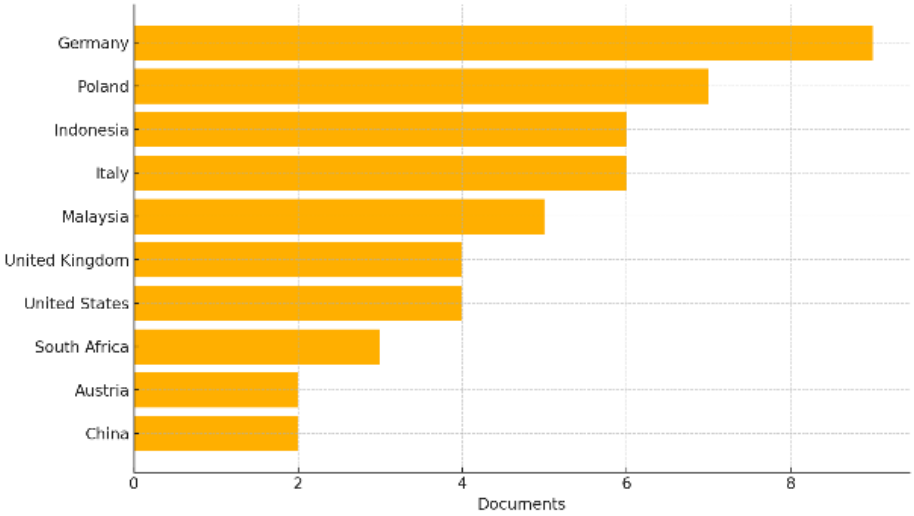

Figure 5. Country Contributions

Figure 5 illustrates the number of documents by country, representing global research contribution to the integration of Knowledge Management (KM) and Digital Transformation (DT) in SMEs. Germany boasts the most documents (9 documents) and reflects strong academic dedication to digital innovation in small businesses. Poland, Indonesia, and Italy have six documents each, reflecting active engagement from both European and Southeast Asian nations. Malaysia, the UK, and the United States of America contribute five and four papers each, demonstrating moderate but significant contribution. Other countries like South Africa, Austria, and China contribute to a lesser degree but their presence does reflect growing global interest in the matter. This spread suggests that while study is concentrated in certain pioneer nations, there is an intense and increasing global interest in exploring how KM and DT can support SME performance and survivability.

Table 2. Key Findings

Author's	Methods	Key Findings
[18], [19], [39]–[43], [45], [47], [48], [52], [53], [27], [54], [28], [29], [32], [33], [36]–[38]	Qualitative	Dynamic capabilities, digital leadership, SME antifragility, cloud offshoring, knowledge sharing, IT assets, innovation, collaboration, adaptation, digital transformation.
[8], [16], [31], [34], [35], [44], [17], [20]–[26]	Quantitative	Digital transformation, innovation, knowledge sharing, IT capability, policy support, efficiency, resilience, sustainability, adoption, organizational behavior.

a. The Impact of Digital Transformation on SMEs

Digital transformation (DT) is a main incentive for SMEs to enhance their antifragility and innovation. [18] emphasized the importance of dynamic capabilities, orientation of leadership, and digital inclusion in achieving antifragility. [17] demonstrated that cloud offshoring services reduce work exhaustion, emphasizing their contribution to creating operational efficiency.

[16] found that IT capability and innovation were highly influenced by Vietnamese government policies, while DT acted as a mediator between them and organisational performance. [29] studied manufacturing SMEs transition to Industry 4.0 and concluded that lean strategies played a significant role in making them prepared and perform better.

[39] discovered that supply chain digitalization is important for SMEs to compete internationally. [31] emphasized that digital platforms contribute positively to Italian SMEs' international performance by maximizing their exploitation-based strategies.

b. Knowledge Management's Role in Digital Innovation

KM is crucial to facilitate innovation among SMEs. [22] found that KM enhances digital orientation and capability, which are mediating variables for its impact on crisis innovation. [21] found key KM tools, such as IT assets, that optimize SME efficiency when analyzed through the DEA model.

[20] suggested a cyber-behavioral signaling model, showing how digital knowledge repositories enable cross-border partnerships and increase finance for SMEs. [44] founded knowledge creation procedures, such as the SECI model,

with increased returns on digital investments.

[36] advanced that green KM practices support SMEs in fulfilling customers' requirements with the guarantee of compliance with sustainability legislation. [35] indicated the way CSR-oriented KM practices drive sustainable business models and growth.

c. Conjoining KM and DT for Sustainability and Resilience

The complementarity of KM and DT promotes SME resilience and aids sustainability. [23] highlighted how IT can help advance transparency and innovation management, whereas [24] examined how information sharing and Sharia fintech contribute to resilience, and it made a suggestion for improved fintech-organizational alignment.

[37] discussed major knowledge factors SMEs must attain DT success, such as barriers of insufficient training and dormant KM systems. [27] highlighted how underdeveloped KM systems lead to knowledge loss and decreased competitiveness.

d. Challenges and Opportunities in Cloud-based Solutions

Cloud-based applications, such as ERP systems, can offer SMEs an opportunity to enhance performance. [19] discovered that effective ERP implementation is dependent on adequate resources and cultural alignment. [30] developed a model of KM system adoption based on resource deployment and capability development.

Conversely, [8] depicted that ICT-adopting SMEs are better positioned with enhanced operational efficacy but are plagued with challenges such as perceived cost and outside pressures. [47] emphasized the manner in which emerging KM tools like mixed-reality learning environments drive knowledge retention in high-tech SMEs.

4.2 Discussion

The findings reaffirm the symbiotic nature of knowledge management (KM) and digital transformation (DT) as drivers of SME growth. DT serves as an engineering foundation to facilitate innovation and enhance business operation, while KM provides a systematic approach to building, sharing, and putting to use knowledge in a coherent way. Dynamic capabilities, as highlighted by [55] and [25], always serve as a critical framework for examination of how SMEs can apply KM and DT in response to evolving business environments.

In practice, synchronization between KM and DT requires surmounting gross obstacles like resources, skill gaps, and implementation resistance. The literature reviewed in this paper highlights that government assistance in the form of financial incentives and policy directives can nudge SMEs toward bridging gaps. Special training schemes dedicated to the digital needs of SMEs and the formation of collaborative eco-systems are required in order to push sustainable adoption of KM and DT practices.

Lastly, cross-fertilization of KM and DT strengthens organizational resiliency, innovativeness, and long-term sustainability. Through utilization of KM to facilitate decision-making and DT to enhance technology processes, SMEs are able to foster adaptability and competitiveness in global markets. The study's conclusions offer a solid basis for creating strategic interventions that will help SMEs prosper in an economy that is becoming more digital and knowledge-intensive.

4.3 Implications for SMEs

1. Strategic Alignment: KM and DT strategies must be aligned by SMEs to achieve full innovation and efficiency.

2. Policy Support: Policymakers must make sure there are training options as well as financial rewards for KM-DT integration.
3. Sustainability: SMEs must incorporate eco-innovative KM practices into DT systems for sustainable improvements in the long run.

5. CONCLUSION

For SMEs to prosper in cutthroat and quickly evolving environments, KM and DT integration is crucial. KM provides the ground for effective digital transformation so that organizations can capitalize on their knowledge assets for innovation and responsiveness. Meanwhile, DT complements KM by offering technology-driven solutions to automate the processes of creating, sharing, and using knowledge. Despite the seemingly evident benefits, SMEs are faced with challenges such as scarce resources, digital skills deficit, and resistance to change. Managing these obstacles requires concerted strategic synergy of KM and DT, backed by tailor-made government policies, training programs, and sustainable measures.

This paper draws empirical insights from 37 Scopus-indexed articles to shed light on cross-fertilization between KM and DT to enhance SME performance. The results contribute to academic literature and deliver actionable recommendations for SME managers and policymakers to trigger resilience, innovation, and sustainability. Industry-specific implications and long-term effects must be explored further in subsequent research to enrich the body of knowledge about the combination of KM and DT in SMEs.

REFERENCES

[1] C. Kraft, J. P. Lindeque, and M. K. Peter, "The digital transformation of Swiss small and medium-sized enterprises: insights from digital tool adoption," *… of Strategy and Management*. emerald.com, 2022. doi: 10.1108/JSMA-02-2021-0063.

[2] N. Trofimova, "Current Trends And Problems Of Sme Digital Transformation: Theories And Studies Of Factors Influencing The Success Of The Dt Process," *Ekon. I Upr. Probl. RESHENIYA*, vol. 12/13, pp. 172–181, Jan. 2024, doi: 10.36871/ek.up.p.r.2024.12.13.021.

[3] C. E. C. Gutierrez and K. R. Acosta, "Challenges and adaptation of the integration of digital tools in small and medium-sized businesses," 2024.

[4] H. Syahrial, L. Lores, D. Siregar, and S. Nazwa, "Crucial Factors Influencing the Success of SMEs in the Digital Transformation Era," *Inf. Manag. Bus. Rev.*, vol. 16, pp. 181–187, Sep. 2024, doi: 10.22610/imbr.v16i3(I)S.4053.

[5] Y. Hu, Y. Pan, M. Yu, and P. Chen, "Navigating digital transformation and knowledge structures: Insights for small and medium-sized enterprises," *J. Knowl. Econ.*, pp. 1–34, 2024.

[6] R. Saini, "Impact of knowledge management practices on selected industries: A structural equation modeling approach," *Manag. Mark.*, vol. 8, no. 4, p. 577, 2013.

[7] J. Chen and T. Cheungsirakulvit, "The Relationship Between Organizational Learning, Knowledge Management And Innovation Performance Of Technology-Based Smes," 2023.

[8] N. V. Muraleedharan and V. P. Velmurugan, "A Review Study on the Influence and Effect of Knowledge Management in Small and Medium Enterprises," *J. Manag. World*, vol. 2025, no. 1, pp. 223–239, 2025.

[9] Abid and Hofa, "A review on the most common pricing strategies," *OSF Prepr.*, no. 1, 2022.

[10] D. Clasissa Aulia *et al.*, "Peningkatan Pengetahuan dan Kesadaran Masyarakat tentang Pengelolaan Sampah dengan Pesan Jepapah," *J. Pengabdi. Kesehat. Masy.*, vol. 1, no. 1, pp. 62–70, 2021.

[11] H. F. Haba, C. Bredillet, and O. Dastane, "Green consumer research: Trends and way forward based on bibliometric analysis," *Clean. Responsible Consum.*, vol. 8, p. 100089, 2023, doi: https://doi.org/10.1016/j.clrc.2022.100089.

[12] V. Unegbu, O. Ayoola, A. Oduwole, T. Aluko-Arowolo, and F. O. Olusanya, "Role clarity as a determinant of job satisfaction among library personnel in South-West universities, Nigeria," *Inf. Impact J. Inf. Knowl. Manag.*, vol. 14, no. 1, pp. 126–143, 2023.

[13] R. Rupeika-Apoga, K. Petrovska, and L. Bule, "The effect of digital orientation and digital capability on digital transformation of SMEs during the COVID-19 pandemic," *Journal of Theoretical and …*. mdpi.com, 2022.

[14] M. Pira and G. Fleet, "Digital business transformation adoption in SMEs and large firms during COVID-19," *Technol. Anal. &Strategic Manag.*, 2023, doi: 10.1080/09537325.2023.2282068.

[15] N. Ganawati, D. Soraya, and I. M. Yogiarta, "The Role of Intellectual Capital, Organizational Learning and Digital Transformation on the Performance of SMEs in Denpasar, Bali-Indonesia," *Int. J. Sci. Manag. Stud. (IJSMS), June*, pp. 235–246, 2021.

[16] B. T. Mai, P. V Nguyen, U. N. H. Ton, and Z. U. Ahmed, "Government policy, IT capabilities, digital transformation, and innovativeness in Post-Covid context: case of Vietnamese SMEs," *Int. J. Organ. Anal.*, vol. 32, no. 2, pp. 333–356, 2024.

[17] A. Alshaher, H. R. Alkhaled, and M. M. HH, "The impact of adoption of digital innovation dynamics in reduce work exhaustion in SMEs in developing countries: The case of cloud of things services," *VINE J. Inf. Knowl. Manag. Syst.*, vol. 55, no. 1, pp. 113–134, 2025.

[18] G. H. Sagala and D. Őri, "Exploring digital transformation strategy to achieve SMEs resilience and antifragility: a systematic literature review," *J. Small Bus. Entrep.*, vol. 37, no. 3, pp. 495–524, 2025.

[19] P. W. Hong, M. Dorasamy, L. J. Hong, and C. A. N. Malarvizhi, "Exploring cloud enterprise resource planning and open innovation for small and medium enterprises: Insights from practitioners," *J. Open Innov. Technol. Mark. Complex.*, vol. 10, no. 4, p. 100418, 2024.

[20] L. Wang, L. Song, Y. Yang, and X. Ding, "Untangling cross-border interfirm effects in SMEs' working capital financing: A cyber-behavioral signaling perspective," *Int. J. Prod. Econ.*, vol. 274, p. 109320, 2024.

[21] D. Wielgórka, "Analysis of the Effectiveness of Technological KM Tools in the SME Sector Using the DEA Model," in *European Conference on Knowledge Management*, 2024, pp. 902–909.

[22] S. Hudayah, M. A. Ramadhani, S. Raharjo, N. P. Ambarita, H. Hidayani, and R. Yudaruddin, "The impact of knowledge management on digital innovation in time of Covid-19 pandemic: The role of digital capability and digital orientation," *WSEAS Trans. Bus. Econ.*, vol. 21, pp. 1276–1285, 2024.

[23] G. C. Lopez-Torres, G. Schiuma, J. Muñoz-Arteaga, and F. J. Alvarez-Torres, "Unveiling the relationships between visibility, information technologies and innovation management for sustainability performance: an empirical study," *Eur. J. Innov. Manag.*, 2024.

[24] H. Khatimah, F. Halim, and P. Susanto, "Enhancing SMEs Resilience: The Role of Sharia Fintech Service and Knowledge Sharing," in *International Conference on Business and Technology*, 2023, pp. 504–516.

[25] A. Pundziene and L. Geryba, "Managing technological innovation: dynamic capabilities, collaborative innovation, and born-digital SMEs' performance," *IEEE Trans. Eng. Manag.*, vol. 71, pp. 6968–6981, 2023.

[26] S. S. Riadi, P. Hapsari, P. Budiman, K. Anwar, and R. Yudaruddin, "The impact of knowledge management on SMES' performance during the COVID-19 pandemic: Assessing the significance of digital variables," *Knowl. Perform. Manag.*, vol. 7, pp. 76–90, Oct. 2023, doi: 10.21511/kpm.07(1).2023.06.

[27] Y. Dassen, G. L. V. Liehner, P. M. Brauner, S. Storms, W. Herfs, and M. C. Ziefle, *Current State and Future Direction of Digital Knowledge Management in Small and Medium Enterprises*. Universitätsbibliothek der RWTH Aachen, 2023.

[28] D. Wielgórka, "Technological Tools, KM and Innovation in SMEs," in *European Conference on Knowledge Management*, 2023, vol. 2, pp. 1462-R41.

[29] M. Charbonneau-Genest and S. Gamache, "The Importance of Digital Readiness on Manufacturing SMEs' Performance Aiming Towards Industry 4.0: A Case Study," in *International Conference on Flexible Automation and Intelligent Manufacturing*, 2022, pp. 630–639.

[30] W. R. van Zyl, S. Henning, and J. A. van der Poll, "A framework for knowledge management system adoption in small and medium enterprises," *Computers*, vol. 11, no. 9, p. 128, 2022.

[31] F. Caputo, F. Fiano, T. Riso, M. Romano, and A. Maalaoui, "Digital platforms and international performance of Italian SMEs: an exploitation-based overview," *Int. Mark. Rev.*, vol. 39, no. 3, pp. 568–585, 2022.

[32] F. Künkel, L. Weißenberger, N. Belousow, T. Sokollek, and F. Döpper, "Concept on using visual and tactile sensors for knowledge management in manual manufacturing processes," *Procedia CIRP*, vol. 112, pp. 186–190, 2022.

[33] S. Al Hakim, D. I. Sensuse, and P. I. Lestari, "The Indonesia triple helix digital platform model in knowledge sharing for product innovation collaboration," *DESIDOC J. Libr. Inf. Technol.*, vol. 42, no. 3, pp. 191–200, 2022.

[34] S. Liu, L. Hou, X. Chen, M. Huang, and H. Hu, "Digital Transformation and Innovation Performance of High-Tech SMEs: Evidence from the Internet Big Data," in *Proceedings of the 2021 3rd International Conference on E-Business and E-commerce Engineering*, 2021, pp. 62–66.

[35] E. Stawicka, "Sustainable development in the digital age of entrepreneurship," *Sustainability*, vol. 13, no. 8, p. 4429, 2021.

[36] G. Chmielarz, "Knowledge Management and Eco-Innovative Service Packages for SMES," in *Proceedings of the European Conference on Knowledge Management, ECKM*, 2021, pp. 170–178.

[37] A. Zoppelletto, L. B. Orlandi, A. Zardini, and C. Rossignoli, "Assessing the role of knowledge management to enhance or prevent digital transformation in SMEs: Critical knowledge factors required," in *2020 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD)*, 2020, pp. 1–6.

[38] N. Casalino, I. Żuchowski, N. Labrinos, Á. L. Munoz Nieto, and J. A. Martín, "Digital strategies and organizational performances of SMEs in the age of Coronavirus: balancing digital transformation with an effective business resilience," *Queen Mary Sch. Law Leg. Stud. Res. Pap. Forthcom.*, 2019.

[39] S. Menon and S. Shah, "Are SMEs ready for industry 4.0 technologies: An exploratory study of i 4.0 technological impacts," in *2020 International Conference on Computation, Automation and Knowledge Management (ICCAKM)*, 2020, pp. 203–208.

[40] E. Ilbiz and S. Durst, "The appropriation of blockchain for small and medium-sized enterprises," *J. Innov. Manag.*, vol. 7, no. 1, pp. 26–45, 2019.

[41] K. Böhm and C. Paul, "'CoMod'–A Model to Support Collaboration and Innovation between Digital Innovation Labs and SMEs," in *Proceedings of the 20th European Conference on Knowledge Management, ACPI*, 2019, pp. 151–159.

[42] M. Filipenko *et al.*, "Towards digital knowledge transfer in small and medium-sized manufacturing enterprises," 2019.

[43] Q. Cavillier and P. Wieser, "Connecting academia and small enterprises: A new field for knowledge management experiments," in *Proceedings of the International Conference on Intellectual Capital, Knowledge Management and Organisational Learning, ICICKM*, 2018, pp. 30–39.

[44] C. Riera and J. Iijima, "Does Investment in Digital Technologies Yield Digital Business Value? The Digital Investment Paradox and Knowledge Creation as Enabling Capability.," in *KMIS*, 2018, pp. 206–213.

[45] B. Quattrociocchi, F. Mercuri, D. D'Arcangelo, and V. Cristini, "Knowledge management to compete in the digital era: Skills evolution of enterprise systems," in *Proceedings of the European Conference on Knowledge Management, ECKM*, 2018, vol. 2, pp. 733–740.

[46] G. Rehm, J. He, J. Schneider, J. Nehring, and J. Quantz, *Designing User Interfaces for Curation Technologies*. 2017. doi: 10.1007/978-3-319-58521-5_31.

[47] A. Fessl, S. Feyertag, and V. Pammer-Schindler, *Designing Innovative Digital Technologies for Knowledge Management and Data-driven Business: A Case Study*. 2015. doi: 10.1145/2809563.2809570.

[48] K. Passerini, A. Tarabishy, and K. Patten, *Information technology for small business: Managing the digital enterprise*. 2013. doi: 10.1007/978-1-4614-3040-7.

[49] G. Wyman, V. Monti-Hollan, and S. Yates, "Conversations with the Marketplace: An application of Design Thinking and Sociodrama Action Methods in an Innovation Workshop," *Int. J. Innov. Sci.*, vol. 4, Jun. 2012, doi: 10.1260/1757-2223.4.2.77.

[50] S. F. Wong, "Examining IT Outsourcing Decisions and Practices of Small and Medium Enterprises in Malaysia," *Commun. IBIMA*, Jan. 2009.

[51] S. Alam and M. Kamal, "ICT Adoption in Small and Medium Enterprises: an Empirical Evidence of Service Sectors in Malaysia," *Int. J. Bus. Manag.*, vol. 4, p. 112, Feb. 2009, doi: 10.5539/ijbm.v4n2p112.

[52] N. Pappas, F. Kazasis, G. Anestis, and S. Christodoulakis, *A Knowledge Management Platform for Supporting Digital Business Ecosystems based on P2P and SOA technologies*. 2007. doi: 10.1109/DEST.2007.371970.

[53] M. D. Sotiriadis and C. Van Zyl, "Electronic word-of-mouth and online reviews in tourism services: the use of twitter by tourists," *Electron. Commer. Res.*, vol. 13, pp. 103–124, 2013.

[54] F. Chessa and F. Moreno, "Ethical and Legal Considerations in End-of-Life Care.," *Prim. Care*, vol. 46, no. 3, pp. 387–398, 2019.

[55] G. H. Sagala and D. Őri, "Toward SMEs digital transformation success: a systematic literature review," *Inf. Syst. E-bus. Manag.*, pp. 1–53, 2024.