



Technological Influence on Sales Performance: A Systematic Review of Drivers and Barriers in SME Digital Transformation

Christopher Chukwuebuka Ndulue ^{1*}, Mohamed Elmansy ², Gabriel Cletus Udoh ³

^{1,2} School of Strategy, Marketing, and Innovation, Faculty of Business and Law, University of Portsmouth, United Kingdom

³ Department of Geology, Faculty of physical sciences, Akwa Ibom State University, Ikot Akpaden, Nigeria

* Corresponding Author: **Christopher Chukwuebuka Ndulue**

Article Info

ISSN (Online): 2582-7138

Impact Factor (RSIF): 7.98

Volume: 06

Issue: 05

September - October 2025

Received: 12-07-2025

Accepted: 13-08-2025

Published: 03-09-2025

Page No: 118-124

Abstract

This article presents a systematic review of 40 peer-reviewed studies published between 2013 and 2023, exploring the technological influence of digital transformation (DT) on sales performance in small and medium-sized enterprises (SMEs). The review identifies key internal drivers, such as innovation, leadership commitment, and organizational culture, and external enablers, including e commerce, cloud computing, and social media, that collectively enhance SMEs' agility, operational efficiency, and customer responsiveness. Drawing on theoretical frameworks such as the Resource-Based View (RBV), Dynamic Capabilities Theory, and Knowledge-Based Theory, the review elucidates how digital capabilities translate into tangible sales outcomes. However, structural and behavioral barriers, particularly financial constraints, skill gaps, and resistance to change, remain critical obstacles to widespread adoption, especially in resource-constrained contexts. The study concludes with recommendations for SME leaders and policymakers, emphasizing integrative strategies and support mechanisms to unlock the full sales potential of digital transformation.

DOI: <https://doi.org/10.54660/IJMRGE.2025.6.5.118-124>

Keywords: Digital Transformation, SMEs, Sales Performance, Technological Drivers

1. Introduction

Small and medium-sized enterprises (SMEs) constitute the backbone of most global economies, contributing significantly to employment, innovation, and GDP (30). Despite their importance, SMEs often face considerable limitations in terms of financial capital, human resources, and technological infrastructure, placing them at a disadvantage in a rapidly digitizing business environment (39). The advent of digital technologies, cloud computing, data analytics, artificial intelligence (AI), and the Internet of Things (IoT), presents vast opportunities for SMEs to reimagine their operations and unlock sales growth.

Digital transformation involves not merely the adoption of discrete technologies, but the holistic integration of digital tools into business models, value creation, and customer engagement strategies (47; 9). For small and medium-sized enterprises (SMEs), the evolving technological landscape presents both opportunities and challenges; while it fosters greater operational flexibility, innovation, and competitive advantage, it simultaneously introduces strategic, financial, and technological complexities that can impede successful digital transformation (6; 28).

Theoretical frameworks guiding this review include:

- Resource-Based View (RBV): Highlights the role of unique digital capabilities (e.g., IT infrastructure, knowledge assets) in enhancing firm performance (8).
- Dynamic Capabilities Theory: Emphasizes agility in seizing digital opportunities and reconfiguring resources for competitive advantage.

- Knowledge-Based View: Focuses on knowledge acquisition, dissemination, and application as core to digital performance
- Upper Echelons Theory: Links leadership vision and digital commitment to organizational outcomes (19).

2. Methodology

2.1 Research Design

The study adopted a descriptive, inductive, and interpretivist approach, consistent with Saunders *et al.*'s (2009) [38] research 'onion' model. A Systematic Literature Review (SLR) framework was chosen to ensure transparency, replicability, and objectivity in the process of identifying and synthesizing evidence from scholarly sources (46). The review focused on qualitative and quantitative peer-reviewed publications exploring digital transformation in SMEs between 2013 and 2023.

2.2 Database Search Strategy

A comprehensive search was conducted using Google Scholar, recognized for its wide indexing of academic literature. The following Boolean combinations (18) were used:

- "digital transformation" AND SMEs AND sales
- "technology adoption" AND SMEs AND barriers
- "digitalization" AND small businesses AND growth drivers
- "e-commerce adoption" OR "cloud computing" OR "social media" AND SMEs

The initial search returned 1,970 articles. Titles and abstracts were screened for relevance, and duplicates were removed. The remaining articles were subjected to further eligibility checks using inclusion and exclusion criteria.

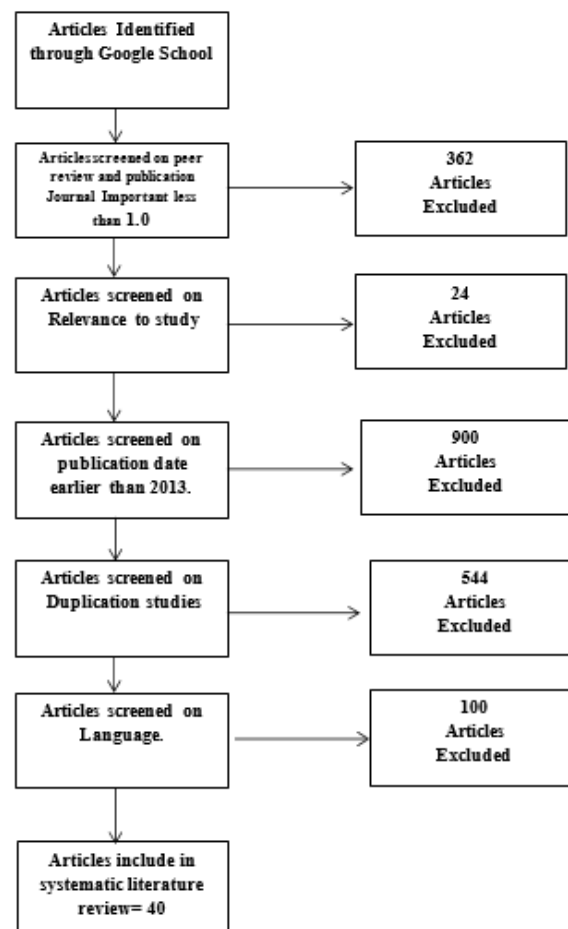


Fig 1: PRISMA Flow Diagram for SLR

2.3 Inclusion and Exclusion Criteria

Inclusion criteria:

- Peer-reviewed articles
- English language
- Journal impact factor ≥ 1.0
- Focus on SMEs and digital transformation

Exclusion criteria:

- Non-peer-reviewed sources
- Non-English publications
- Articles published before 2013

This process led to a final selection of 40 peer-reviewed studies which were included in this review (see Table 2 for summary), covering various industries and geographies.

Table 1: Article Selection Process Summary

Stage	Number of Articles
Initial articles identified	1,970
Removed: Low-impact journals	362
Removed: Non-SME relevance	544
Removed: Duplicates	900
Removed: Non-English	100
Final articles included	40

3. Results

3.1. Study Distribution by Year and Study Type

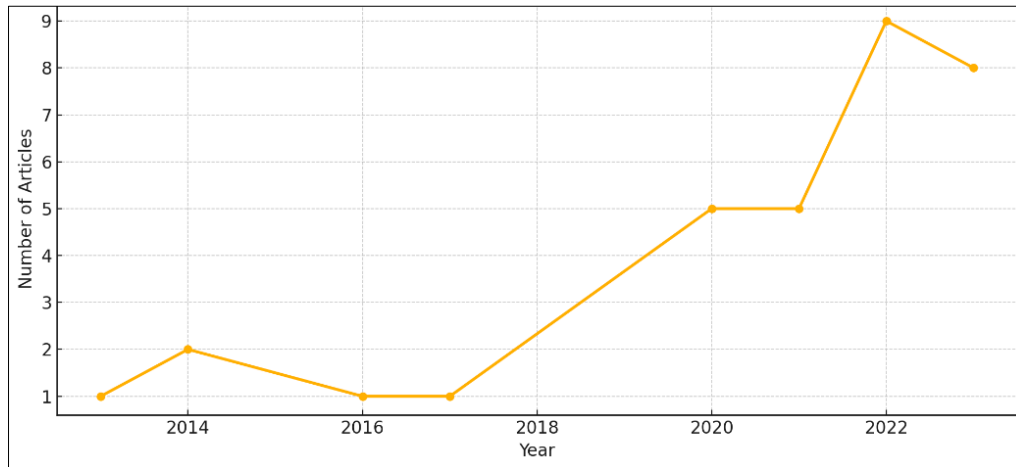


Fig 2: Publication Trends Chart showing the number of articles published per year (2013 – 2023) on SME digital transformation and sales performance.

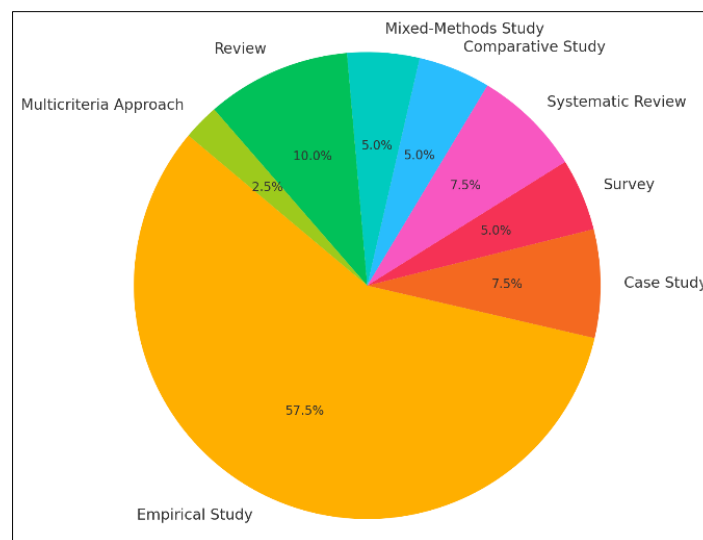


Fig 3: Pie-chart of Study Type Distribution illustrating the proportion of empirical, case study, systematic review, and mixed/other methodologies in the reviewed articles.

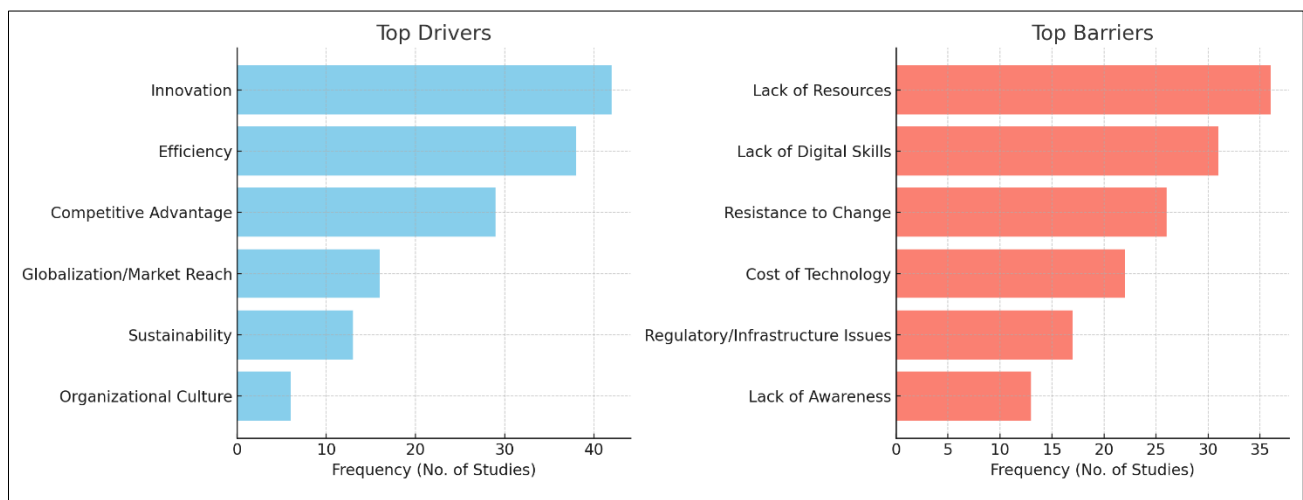


Fig 4: Bar chart illustrating Top Internal Drivers and Top Barriers influencing SME sales performance through digital transformation, based on frequency across reviewed studies.

Table 2: Most Frequently Cited Internal Technological Drivers and Barriers

Drivers	Frequency	Barriers	Frequency
Innovation	38	Lack of Resources	34
Efficiency	36	Lack of Digital Skills	29
Competitive Advantage	27	Resistance to Change	24
Globalization/Market Reach	14	Cost of Technology	20
Sustainability	11	Regulatory/Infrastructure Issues	15
Organizational Culture	4	Lack of Awareness	11

4. Discussion

This systematic review of 40 studies provides comprehensive insights into the technological drivers and barriers influencing sales performance in small and medium-sized enterprises (SMEs). The findings underscore the dual nature of digital transformation in the SME context, offering significant opportunities for sales enhancement while simultaneously revealing persistent limitations that undermine its full potential.

4.1. Publication Trends (2013–2023)

The publication trend (Fig. 2) chart shows a sharp increase in scholarly output since 2020, highlighting growing academic attention on digital transformation in SMEs. This surge reflects the heightened urgency brought on by the COVID-19 pandemic, which pushed many small businesses to adopt digital tools for survival and growth. The increased research interest indicates a broader recognition of digital technologies as strategic enablers of SME growth, with sales performance being a core performance metric.

4.2. Study Type Distribution

The pie chart (Fig. 3) reveals that empirical studies dominate the literature (57.5%), suggesting that claims about technology's sales impact are grounded in real-world evidence. The presence of systematic reviews and mixed-methods studies also underscores a maturing research field, where scholars are not only exploring new cases but also synthesizing patterns across multiple contexts. This diversity strengthens the reliability of the review's findings and validates the link between digital transformation and improved sales outcomes.

4.3 Top Drivers of Digital Transformation in SMEs

- Innovation** emerged as the most frequently cited driver (Fig 4), appearing in 95% of the studies (1; 2; 3; 12; 13; 14; 16; 17; 18; 21 - 29; 30; 32; 33; 34; 44; 45; 48). For SMEs, innovation here extends beyond new products or services to include the creative application of digital tools that streamline sales workflows, personalize customer engagement, and differentiate offerings, enabling SMEs to adapt swiftly to market demands and build competitive advantages.
- Efficiency** was another dominant driver, closely linked with process optimization, automation, and reduced operational costs. Studies such as (1-4; 9; 14; 21; 27; 28; 32; 34-36) demonstrated how digital solutions enable leaner operations and more responsive customer service, thereby boosting sales capabilities.
- Competitive Advantage and Pressure** were widely noted (12; 13; 21; 25; 28; 32; 35; 48), suggesting that SMEs are compelled to transform digitally in response to market demands, competitor actions, and shifting consumer expectations. Digital readiness allows SMEs to differentiate their offerings and expand into new

markets.

- Sustainability and Environmental Concerns** also emerged as noteworthy drivers (3; 17; 22; 23; 40; 48), particularly in industries facing environmental regulations or stakeholder pressure to adopt green practices. Digital tools in such contexts facilitate energy monitoring, supply chain transparency, and sustainable production.
- Globalization and Market Expansion** were increasingly identified as strategic motivations, especially among SMEs in emerging economies seeking to access international markets. Technology enables cross-border reach, digital marketing, and integration with global supply chains (5; 14; 32; 33; 34; 41; 43; 48). For instance, an Indonesian SME in Anatan and Nur's (2023) ^[5] study saw a 22% increase in quarterly sales after adopting integrated digital channels, demonstrating how scalable, low-cost technologies can effectively expand sales reach.
- Organizational Culture and Adaptability** were highlighted in a subset of studies (14; 23; 43; 45), emphasizing that firms with a learning-oriented or innovation-driven culture are more likely to successfully implement technologies that directly or indirectly enhance sales performance.

4.4 Barriers to Digital Transformation in SMEs

Despite widespread enthusiasm for digital transformation, several persistent barriers were identified across the literature.

- Lack of resources**, financial, technological, or human: was the most cited barrier (1; 7; 9; 14; 24; 29; 35; 36; 37; 40). SMEs often struggle with budget constraints, making it difficult to invest in advanced tools or sustain transformation efforts over time.
- Skills Gaps and Digital Competence Deficiencies** were prominent across studies (13; 14; 24; 25; 37; 43). SMEs commonly lack personnel with the technical know-how required to manage, maintain, and strategically deploy digital systems for sales optimization.
- Resistance to Change**: whether at the leadership or employee level: was identified as a major internal hurdle (7; 14; 17; 23; 45). In several cases, even when tools were available, reluctance to shift from traditional models or uncertainty about technology outcomes hampered implementation and sales benefits.
- Cost of Adoption** remains a consistent theme, particularly in manufacturing and retail sectors where integration requires significant capital (1; 7; 9; 24; 29; 36; 37).
- Regulatory Constraints and Infrastructure Challenges** were especially evident in studies from developing regions (7; 14; 40; 48), where digital transformation is limited by policy rigidity, inadequate I.T. infrastructure, or unclear compliance frameworks.

6. **Lack of Awareness** of digital opportunities was another repeated barrier, particularly in earlier studies (3; 11; 29; 32; 40), where SMEs had not yet internalized the full scope of benefits digital technologies could bring to customer acquisition and retention.
7. **Security Concerns, Leadership Deficiencies, and Uncertainty** were also present, albeit less frequently. These highlight the psychological and governance-related apprehensions SMEs face when dealing with transformation initiatives that impact sensitive customer and sales data (7; 13; 14; 15; 17; 37). This in addition to uncertainties around ROI, complex regulations, and limited digital awareness, particularly in developing markets, exacerbate these challenges (9; 17; 21; 30; 40; 43). As illustrated by Ramdani *et al.*, (2022) ^[35], even when tools are available, internal resistance can lead to missed opportunities and stagnant sales.

4.5. Industry and Regional Insights

The majority of the reviewed studies focused on SMEs in general industry contexts, though a substantial number were concentrated in manufacturing (e.g. 3; 9; 24). In this sector, the intersection of digital transformation and operational efficiency was most pronounced, with implications for streamlined production, improved sales forecasting, and faster go-to-market cycles.

Regionally, while many studies were cross-national, those explicitly situated in Asia (e.g., 5; 13; 25) and Europe (e.g., 7; 34; 41) highlighted unique contextual challenges, such as regulatory environments, infrastructure readiness, and cultural adoption dynamics that shaped both drivers and barriers.

4.6. Implications for SME Sales Performance

The findings suggest that digital transformation significantly enhances SME sales performance when aligned with internal innovation capacity, market responsiveness, and supportive external conditions. Innovation and efficiency improvements boost product visibility, streamline customer engagement, and enable data-driven decision-making. However, transformation success is heavily contingent upon overcoming resource shortages, skills deficits, and cultural inertia.

For policymakers and ecosystem enablers, the review highlights the importance of targeted digital skill development, subsidized infrastructure, and policy reforms tailored to SME contexts. For SME leaders, fostering a culture of innovation, investing in change management, and strategically planning technology adoption are essential to translating digital transformation into tangible sales performance gains.

4.7 Synthesis of Drivers and Barriers: A Dual Reality

Table 2 summarizes the most frequently cited technological drivers and barriers associated with SME sales performance across the reviewed studies. This synthesis illustrates a dual reality for SMEs: while the tools to enhance sales performance exist and are increasingly accessible, the internal and external contexts in which SMEs operate often inhibit their effective use.

4.8 Implications for Practice and Policy

For SMEs, the implications are clear: technology alone does not drive sales performance, strategic alignment, capacity-

building, and cultural openness are equally critical. Leadership must prioritize the development of digital sales strategies that align technological investments with customer needs, market trends, and internal capabilities. From a policy perspective, the findings support the need for targeted interventions in the form of:

- Digital upskilling programs for SME workforces;
- Financial subsidies or low-interest loans for tech adoption;
- Simplified regulatory frameworks supporting e-commerce and data exchange.

Notably, Bollweg *et al.* (2020) ^[11] illustrated that a retail SME achieved a 31% increase in sales following the deployment of an integrated POS and loyalty platform, a success largely attributed to managerial efforts in staff onboarding and the provision of performance-based incentives that fostered effective digital tool utilization.

5. Conclusion

This systematic review provides a structured synthesis of how digital transformation influences sales performance in small and medium-sized enterprises (SMEs), highlighting both its enabling factors and limiting conditions. The evidence demonstrates that when supported by internal drivers such as innovation, leadership commitment, and organizational culture, as well as external enablers like cloud technologies, e-commerce platforms, and social media, digital tools significantly enhance SME agility, efficiency, and customer responsiveness. Theoretical frameworks including the Resource-Based View, Dynamic Capabilities, and Upper Echelons Theory contextualize these findings, illustrating how SMEs can convert digital capabilities into measurable sales gains. However, structural and behavioral barriers, such as financial constraints, digital skill deficits, and organizational resistance, continue to impede broader adoption, particularly in resource-limited settings. Addressing these challenges requires coordinated efforts: SME leaders must foster digital readiness and innovation culture, while policymakers must strengthen digital infrastructure, streamline regulation, and expand access to technical and financial support. Although bounded by contextual and methodological limitations, this review offers a valuable foundation for future research and policy action aimed at unlocking the full sales potential of digital transformation in SMEs.

6. References

1. Abd Razak SNA, Noor WNBWM, Jusoh YHM. Embracing digital economy: Drivers, barriers and factors affecting digital transformation of accounting professionals. *Int J Adv Res Econ Financ*. 2021;3(3):63-71.
2. Al-Ansari Y, Pervan S, Xu J. Innovation and business performance of SMEs: The case of Dubai. *Educ Bus Soc Contemp Middle East Issues*. 2013;6(3/4):162-80.
3. Alayón CL, Säfsten K, Johansson G. Barriers and enablers for the adoption of sustainable manufacturing by manufacturing SMEs. *Sustainability*. 2022;14(4):2364.
4. AlManei M, Salonitis K, Xu Y. Lean implementation frameworks: the challenges for SMEs. *Procedia Cirp*. 2017;63:750-5.

5. Anatan L, Nur. Micro, Small, and Medium Enterprises' Readiness for Digital Transformation in Indonesia. *Economies*. 2023;11(6):156.
6. Appio FP, Frattini F, Petruzzelli AM, Neirotti P. Digital transformation and innovation management: A synthesis of existing research and an agenda for future studies. *J Prod Innov Manag*. 2021;38(1):4-20.
7. Aygün D, Sati ZE. Evaluation of Industry 4.0 transformation barriers for SMEs in Turkey. *Eskisehir Osmangazi Univ İktisadi ve İdari Bilimler Dergisi*. 2022;17(1):239-55.
8. Barney J. Firm resources and sustained competitive advantage. *J Manage*. 1991;17(1):99-120. doi:10.1177/014920639101700108
9. Battistoni E, Gitto S, Murgia G, Campisi D. Adoption paths of digital transformation in manufacturing SME. *Int J Prod Econ*. 2023;255:108675.
10. Bharadwaj A, El Sawy OA, Pavlou PA, Venkatraman N. Digital business strategy: Toward a next generation of insights. *MIS Q*. 2013;37:471-82.
11. Bollweg L, Lackes R, Siepermann M, Weber P. Drivers and barriers to the digitalization of local owner-operated retail outlets. *J Small Bus Entrep*. 2020;32(2):173-201.
12. Chen YYK, Jaw YL, Wu BL. Effect of digital transformation on organizational performance of SMEs: Evidence from the Taiwanese textile industry's web portal. *Internet Res*. 2016;26(1):186-212.
13. Dutta G, Kumar R, Sindhvani R, Singh RK. Digital transformation priorities of India's discrete manufacturing SMEs—a conceptual study in perspective of Industry 4.0. *Compet Rev*. 2020;30(3):289-314.
14. Elhusseiny HM, Crispim J. SMEs, barriers, and opportunities on adopting Industry 4.0: A review. *Procedia Comput Sci*. 2022;196:864-71.
15. Feliciano-Cestero MM, Ameen N, Kotabe M, Paul J, Signoret M. Is digital transformation threatened? A systematic literature review of the factors influencing firms' digital transformation and internationalization. *J Bus Res*. 2023;157:113546.
16. Gassman O, Frankenberger C, Schick M. Business models: 55 best templates. Zurich: Oliver Gassman; 2016.
17. Ghobakhloo M, Iranmanesh M, Vilkas M, Grybauskas A, Amran A. Drivers and barriers of Industry 4.0 technology adoption among manufacturing SMEs: A systematic review and transformation roadmap. *J Manuf Technol Manag*. 2022;33(6):1029-58.
18. Gruenhagen JH, Parker R. Factors driving or impeding the diffusion and adoption of innovation in mining: A systematic review of the literature. *Resour Policy*. 2020;65:101540.
19. Hambrick DC, Mason PA. Upper echelons: The organization as a reflection of its top managers. *Acad Manage Rev*. 1984;9(2):193-206.
20. Hanelt A, Bohnsack R, Marz D, Antunes Marante C. A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *J Manage Stud*. 2021;58(5):1159-97.
21. Hina M, Chauhan C, Kaur P, Kraus S, Dhir A. Drivers and barriers of circular economy business models: Where we are now, and where we are heading. *J Clean Prod*. 2022;333:130049.
22. Isensee C, Teuteberg F, Griesse KM, Topi C. The relationship between organizational culture, sustainability, and digitalization in SMEs: A systematic review. *J Clean Prod*. 2020;275:122944. doi:10.7759/cureus.864
23. Jones MD, Hutcheson S, Camba JD. Past, present, and future barriers to digital transformation in manufacturing: A review. *J Manuf Syst*. 2021;60:936-48. doi:10.1016/j.jmsy.2021.08.020
24. Khin S, Hung Kee DM. Identifying the driving and moderating factors of Malaysian SMEs' readiness for Industry 4.0. *Int J Comput Integr Manuf*. 2022;35(7):761-79.
25. Klewitz J, Hansen EG. Sustainability-oriented innovation of SMEs: A systematic review. *J Clean Prod*. 2014;65:57-75.
26. Lai VS, Wang Y. How do IT service innovation capabilities impact SME performance? The mediating roles of absorptive capacity and social capital. *Inf Technol People*. 2020. Available from: <https://www.scirp.org/reference/referencespapers?refereceid=1592401>
27. Melo IC, Queiroz GA, Junior PNA, de Sousa TB, Yushimito WF, Pereira J. Sustainable digital transformation in small and medium enterprises (SMEs): A review on performance. *Heliyon*. 2023;9(3).
28. Modi P, Rawani AM. Drivers of innovation practices in SMEs: A literature review. In: *Research Anthology on Small Business Strategies for Success and Survival*. 2021. p.1-15.
29. Nadkarni S, Prügl R. Digital transformation: A review, synthesis, and opportunities for future research. *Manag Rev Q*. 2021;71:233-341.
30. OECD. Enhancing the contributions of SMEs in a global and digitalized economy. Meeting of the OECD Council at Ministerial Level. Paris: OECD Publishing; 2017. Available from: <https://www.oecd.org/mcm/documents/C-MIN-2017-8-EN.pdf>
31. Omrani N, Rejeb N, Maalaoui A, Dabić M, Kraus S. Drivers of digital transformation in SMEs. *IEEE Trans Eng Manag*. 2022.
32. Passaro R, Quinto I, Scandurra G, Thomas A. The drivers of eco-innovations in small and medium-sized enterprises: A systematic literature review and research directions. *Bus Strateg Environ*. 2023;32(4):1432-50.
33. Peter MK, Kraft C, Lindeque J. Strategic action fields of digital transformation: An exploration of the strategic action fields of Swiss SMEs and large enterprises. *J Strateg Manag*. 2020;13(1):160-80.
34. Pfister P, Lehmann C. Returns on digitization in SMEs—a systematic literature review. *J Small Bus Entrep*. 2023;35(4):574-98.
35. Ramdani B, Raja S, Kayumova M. Digital innovation in SMEs: a systematic review, synthesis and research agenda. *Inf Technol Dev*. 2022;28(1):56-80.
36. Rupeika-Apoga R, Bule L, Petrovska K. Digital transformation of small and medium enterprises: Aspect of public support. *J Risk Financ Manag*. 2022;15(2):45.
37. Rupeika-Apoga R, Petrovska K, Bule L. The effect of digital orientation and digital capability on digital transformation of SMEs during the COVID-19 pandemic. *J Theor Appl Electron Commer Res*. 2022;17(2):669-85.
38. Saunders M, Lewis P, Thornhill A. Research Methods

- for Business Students. Harlow: Pearson Education; 2009.
39. Šimberová I, Korauš A, Schüller D, Smolíkova L, Straková J, Váchal J. Threats and opportunities in digital transformation in SMEs from the perspective of sustainability: A case study in the Czech Republic. *Sustainability*. 2022;14(6):3628.
 40. Skare M, de Obesso MDLM, Ribeiro-Navarrete S. Digital transformation and European small and medium enterprises (SMEs): A comparative study using digital economy and society index data. *Int J Inf Manage*. 2023;68:102594.
 41. Soltysova Z, Modrak V. Challenges of the sharing economy for SMEs: A literature review. *Sustainability*. 2020;12(16):6504.
 42. Sonar H, Ghag N, Singh RK, Daim TU, Agrawal S. Digitalization of operations for sustainable value creation by SMEs: Analysis of barriers in the era of Industry 4.0. *J Knowl Manag*. 2025;29(6):2018-45. doi:10.1108/JKM-05-2024-0522
 43. Stentoft J, Adsbøll Wickstrøm K, Philipsen K, Haug A. Drivers and barriers for Industry 4.0 readiness and practice: Empirical evidence from small and medium-sized manufacturers. *Prod Plan Control*. 2021;32(10):811-28.
 44. Stornelli A, Ozcan S, Simms C. Advanced manufacturing technology adoption and innovation: A systematic literature review on barriers, enablers, and innovation types. *Res Policy*. 2021;50(6):104229.
 45. Thrassou A, Uzunboylu N, Vrontis D, Christofi M. Digitalization of SMEs: A review of opportunities and challenges. In: *The Changing Role of SMEs in Global Business: Volume II: Contextual Evolution Across Markets, Disciplines and Sectors*. 2020. p.179-200.
 46. Tranfield D, Denyer D, Smart P. Towards a methodology for developing evidence-informed management knowledge employing systematic review. *Br J Manage*. 2003;14:207-22.
 47. Westerman G, Bonnet D, McAfee A. The digital advantage: How digital leaders outperform their peers in every industry. *MIT Sloan Manage Rev*. 2011;52(2):71-77.
 48. Zhu X, Ge S, Wang N. Digital transformation: A systematic literature review. *Comput Ind Eng*. 2021;162:107774.