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Digital Business Model Innovation In Smes: A Systematic Literature Review

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Abstract

Purpose – Digital business model innovation (DBMI) is crucial for SMEs to survive and thrive in this era of rapid digital transformation. However, research on DBMI remains fragmented, with limited understanding of the driving factors, implementation strategies, impacts, and challenges faced by SMEs in adopting DBMI. This article systematically reviews the literature on DBMI in SMEs (2015-2025), identifying key themes, research gaps, and providing future research directions.

Methodology –This study uses a systematic literature review (SLR) approach based on PRISMA guidelines. The selected literature consists of 25 articles that were analysed descriptively and thematically, with a focus on the SME context.

Findings – The review results show that DBMI is influenced by internal factors such as transformational leadership and technological readiness, as well as external factors such as government support and crises. The implementation of DBMI in SMEs includes process digitization, value proposition innovation, and revenue model changes. The impacts include improved financial performance, competitiveness, and business resilience, despite challenges such as resource constraints and resistance to change.

Originality – This article fills the literature gap by synthesizing DBMI in SMEs from developing countries and offers a new theoretical framework for digital business model development.

INTRODUCTION

Digital Business Model Innovation (DBMI) has become a strategic necessity for Small, and Medium Enterprises (SMEs) in facing competition in this era of rapid digital transformation. With the increasing adoption of digital technology and changes in market demand patterns, SMEs are required to integrate this technology in creating, offering, and delivering business value, rather than relying on conventional business models (Kurti et al., 2021). A business model is considered "digital" when digital technology significantly changes key business components, including value creation, value proposition, value delivery, and value capture (Kronblad & Pregmark, 2024; Montasser et al., 2023). Focusing on innovation across all these elements is necessary to achieve optimal results; comprehensive utilization of digital technology is key to building sustainable competitive advantage for SMEs in the digital economy (Wang et al., 2025).

The majority of companies are currently shifting their focus from expensive new technologies to digital business model innovation. This shift is occurring because companies realize that transforming how they create, deliver, and capture value through digital platforms such as apps, e-commerce, and data driven models provides a more flexible and relevant response to current consumer needs (Kronblad & Pregmark, 2024; Montasser et al., 2023). Surveys show that

many managers have embraced digital business model innovation, including tactics such as subscription services and sharing platforms, in response to intense competition and market volatility (Montasser et al., 2023; Rodrigues & de Noronha, 2023). With short product life cycles and rapid new product generation, companies now prefer to provide continuously updated digital solutions rather than just selling physical goods, thereby creating sustainable value and profitability (Trischler & Li-Ying, 2023; Williamsson, 2023). Competitive advantage in the digital era is now determined not only by the most advanced products, but also by the ability to design adaptive, customer-oriented digital business models (Sun & Zhang, 2025).

Research on Digital Business Model Innovation (DBMI) is still relatively new but growing rapidly. The increase in business model innovation practices in the field has led to a surge in academic publications in recent years, and studies on business models have been recognized as an established field in management science (Kronblad & Envall Pregmark, 2024; Montasser et al., 2023). Initially, research such as that conducted by (Trischler & Li-Ying, 2023) identified a lack of clarity in boundaries and focus, indicating the fragmented nature of the research. In the years that followed, research by Montasser et al., (2023) emphasized the need for better hypothesis testing to clarify constructs in DBMI research. Recent studies using bibliometric analysis show that while trends and citation networks can be mapped, such approaches cannot replace the depth of understanding provided by a systematic literature review. Even though digital business model innovation continues to be a debated theme in modern management practice, there is still an urgent need to strengthen its theoretical foundation with clearer concepts and boundaries, as well as an analytical framework that can provide effective guidance for the development and testing of business models in a dynamic digital environment(Kurti et al., 2021; Trischler & Li-Ying, 2023).

The research gap related to digital business model innovation indicates the need for in-depth attention. Although there has been an increase in knowledge about antecedents and mediators in recent years, understanding of these factors remains fragmented, and their structure has not been clearly formulated (Kronblad & Envall Pregmark, 2024; Montasser et al., 2023). The rapid increase in literature requires a review and categorization of research developments from their inception to the current state (Montasser et al., 2023). The current state of research on business model innovation remains unclear and needs to be examined in depth so that contributions to the understanding of business model innovation become clearer (Trischler & Li-Ying, 2023). Research conducted by (Trischler & Li-Ying, 2023) emphasizes that although publication trends in this field are increasing, a clear theoretical framework and comprehensive understanding of digital business model innovation are needed to guide future research. Given the growing number of publications in recent years, recommendations for a clearer research focus and a framework for future development are essential (Montasser et al., 2023; Wang et al., 2025). Knowledge from various sources needs to be gathered to describe the state-of-the-art of business model innovation in an easily understandable way so as to provide guidance for researchers in developing future business models (Liu & Xie, 2025; Lu & Yu, 2022).

In order to address the research gap in the literature on business model innovation, it is important to conduct a systematic review of the existing literature. Systematic literature reviews have proven useful in developing and directing research on similar issues in the (Kurti et al., 2021; Trischler & Li-Ying, 2023). The main focus of this study is to respond to the nee d for structure, clarity, and focus in future research related to digital business model innovation (Trischler & Li-Ying, 2023). This is necessary because although knowledge about the antecedents and mediators of business model innovation has increased, understanding of these factors remains fragmented

and unstructured. Therefore, this work specifically considers three research questions that will help define existing gaps and provide a framework for future research. A comprehensive analysis of the dynamics of transformational leadership and its ability to influence business model innovation, as discussed by Montasser et al. (2023), as well as the importance of government support in encouraging the development of digital business model innovation in SMEs. This study is expected to provide a clearer picture of the current status of business model innovation literature and identify more focused and targeted research directions for the future (Liang et al., 2023).

Based on the above background, a structured literature review is needed to understand how research on digital business model innovation in SMEs has developed over the past decade (2015–2025), as well as its main thematic findings. Specifically, this review aims to: (1) provide a structured overview of the volume and characteristics of publications related to DBMI in the context of SMEs (e.g., distribution by year, journal, geographic region, and research method), (2) identify the main themes that have been studied in relation to digital business model innovation in the context of SMEs, along with a synthesis of key findings in each theme, and (3) formulate theoretical and practical implications based on existing research gaps, including recommendations for future research agendas. Through these objectives, it is hoped that this review will provide a comprehensive overview of the development and characteristics of DBMI literature in the context of SMEs. This review is important for researchers and practitioners to recognize patterns of findings, identify gaps, and discover opportunities for further research in the field of digital business model innovation for SMEs.

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METHODS

This study is a systematic literature review. The literature search and screening process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Figure 1 shows the selection flow of studies reviewed according to the PRISMA framework. The literature search was conducted in the reputable international journal database Scopus for publications from 2015 to 2025. The keywords used include (TITLE-ABS-KEY ("Business Model Innovation")) AND ("digital business model innovation") AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp") OR LIMIT-TO (DOCTYPE , "re")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (OA , "all") OR LIMIT-TO (OA , "repository") OR LIMIT-TO (OA , "publisherfree2read")).

The inclusion criteria applied are: (a) journal articles (and selected proceedings) that explicitly discuss digital business model innovation in the context of SMEs or small-to-medium enterprises; (b) studies that do not explicitly mention SMEs but whose main topics and findings are considered relevant and applicable to SMEs (e.g., research on digital business model innovation in companies with characteristics similar to SMEs); and (c) articles in English that are available in full-text form. Conversely, studies whose main focus is solely on the adoption of digital technology without a

clear connection to business models, or which only marginally mention SMEs, are excluded from the review. (d) open access articles.

In the initial identification stage, approximately 85 publications were obtained. In the screening stage, 29 articles were read in full-text for relevance assessment. Based on their suitability to the topic of DBMI–SMEs and the quality of the publications, 25 studies ultimately met all the criteria and were included in the review (see Figure 1). For each selected study, bibliographic data and main content were extracted, including the year and source of publication, geographical/country context, specific focus/topic, research methods, and key results or findings. The data were then analysed descriptively to answer objective (1), and analysed qualitatively-thematically to answer objectives (2) and (3). Thematic analysis was conducted by reading the results of each study in depth, then grouping frequently emerging issues or topics to form several main themes that represent the research focus in the DBMI–SME literature.

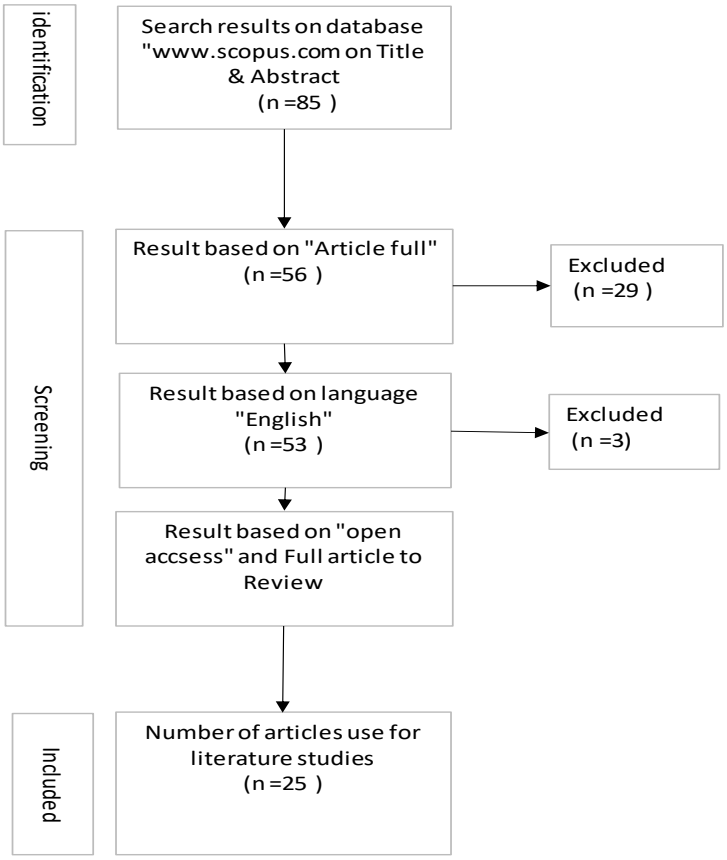
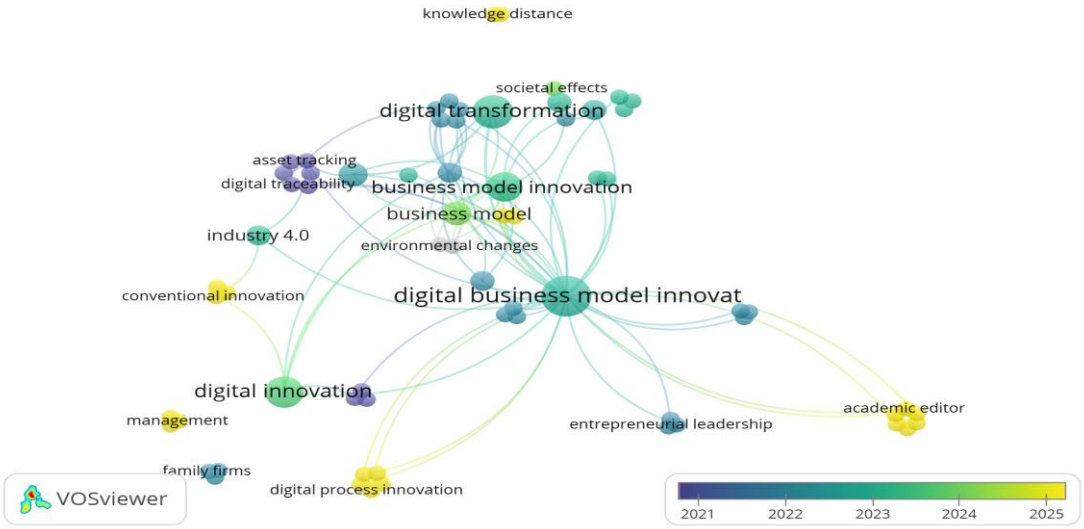


Figure 1.

PRISMA Innovation Digital Business Model Diagram

DISCUSSION

Network Visualization Keywords



Source: VOSviewers Software (2025)

Figure 2.
Keyword Network Visualization

Figure 2 shows a network of concepts related to digital business model innovation that has developed over several years, particularly between 2015 and 2025. The figure shows strong connections between concepts such as business model innovation, digital business model innovation, and digital transformation. These concepts appear to have developed in line with the increasing intensity of connections between terms that have become more dominant over time. The lighter colours on the right represent more recent periods, indicating that this topic will become increasingly relevant in the coming years. This image shows how concepts related to digital business model innovation are connected and evolve in line with changes in industry and society. For example, digital innovation and Industry 4.0 emerge as important concepts that underpin the development of innovation in digital business models. Concepts such as societal effects show that this innovation does not only focus on technological aspects, but also has a significant social impact. By looking at the patterns that emerge in the image, it can be concluded that digital business model innovation is increasingly integrated with concepts of technology and social impact, and is becoming a major focus in industry development. This shows that in the coming period, there is a high possibility that the focus of research will shift to social influence and entrepreneurial leadership in directing digital business model innovation, with increasing attention to the role of digital technology and industry 4.0 in advancing these business models.

General Characteristics of Publications

A total of 25 studies that met the criteria were identified, published between 2015 and 2025. There has been a noticeable trend of increasing publications on digital business model innovation in SMEs over the past decade. Figure 3 shows the distribution of publications per year. In the early years (2015–2016), this topic was rarely discussed, but since 2018 there has been a significant increase. The peak in the number of publications was around 2020–2022, in line with the increased attention to digital transformation and the impact of the COVID-19 pandemic on MSME business models. After that, in 2023, the number of studies decreased slightly, and data for 2025 is still limited (until mid-2025).

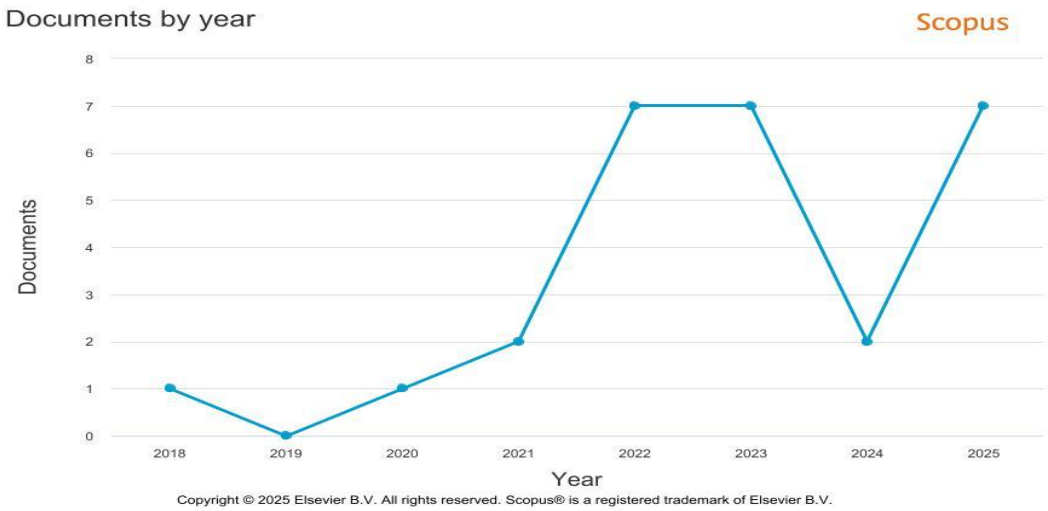


Figure 3.
Number of publications per year

Figure 3 shows the number of documents published per year from 2018 to 2025, based on data from Scopus. There are significant fluctuations in the number of documents each year. In 2018 and 2019, the number of documents was very low, only one or two documents per year. However, starting in 2020, the number of documents began to increase sharply, peaking in 2022 with more than 7 documents. After that, the number of documents declined again in 2023 and 2024, before finally increasing again in 2025. This trend may indicate a significant change in publication or research activity during that period.

From a geographical perspective (Table 1), this literature covers studies spread across various countries, indicating a broad scope of research. With China and Sweden dominating as the two leading countries in terms of the number of documents published, as well as significant contributions from European countries such as Denmark and Germany, it can be seen that this research focuses on Asia and Europe. Australia, Finland, and Indonesia, despite having fewer documents, still show involvement in this research, even though they are outside the two dominant regions. This shows that there are variations in research intensity that can be influenced by regional factors, resources, or the research priorities of each country.

Table 1. Geographical Distribution Of Reviewed Publications

Country	Documents
China	7
Sweden	6
Denmark	4
Germany	4
Australia	2
Finland	1
Indonesia	1

In terms of research methods, both quantitative and qualitative approaches are widely

used. About half of the studies are quantitative empirical studies (often surveys) to test the relationship between variables related to DBMI. Quantitative research dominates, with 14 documents, which shows the use of methods that rely on numerical data and statistical analysis. Meanwhile, mixed research is also quite significant, with 7 documents combining qualitative and quantitative methods. Qualitative research, although fewer in number (4), still makes an important contribution to understanding phenomena in a deep and holistic manner.

Table 2. Research Approach Distribution

Type of Research	Number
Qualitative	4
Quantitative	14
Mixed (mix)	7
Total	25

Source: processed data

Next, the results of this literature review are organized into four main themes that have been identified, namely: (1) Factors driving DBMI in SMEs, (2) DBMI implementation strategies and approaches, (3) The impact of DBMI on SME performance and competitiveness, and (4) Challenges and obstacles in implementing DBMI in SMEs. Each theme is described below along with a synthesis of key findings.

1. DBMI Driving Factors in SMEs

Several key factors have been identified as drivers or antecedents that encourage SMEs to innovate digital business models. These factors can be categorized into two groups: internal factors (from within the SME organization) and external factors (the environment).

Table 3. DBMI Driving Factors in SMEs

Type of Factor	DBMI Drivers	Role in DBMI
Internal	Leadership & Management Orientation	Visionary, proactive leaders who are willing to take risks and support digital change drive DBMI.
	Organizational Capability & Readiness	IT-based dynamic capabilities and digital readiness (infrastructure, human resource competence, innovation culture) facilitate DBMI.
External	Government Support & Policy	Government policies, programs, and facilities act as catalysts for the adoption of technology and digital business model innovation.
	Institutional Pressure & Regulations	Regulatory pressures, industry norms, and market/customer demands force companies to seek digital business model innovations.
	External Shocks & Crises	Crises serve as "trigger events" that accelerate digital transformation and force SMEs to adopt DBMI for survival.

Source: Own elaboration based on Scopus database (2025)

Leadership & Management Orientation.

Leadership plays a central role in driving digital business model innovation at the MSME level, as demonstrated by several empirical and conceptual studies. Field studies in Indonesia

found that transformational leadership from top management is positively and significantly correlated with the achievement of digital business model innovation (DBMI), because visionary, proactive, and risk-supportive leaders create organizational conditions conducive to digital change (Montasser et al., 2023). The mechanism of influence is often indirect: transformational leadership increases organizational readiness and dynamic capabilities enabled by information technology, which in turn facilitates the adoption of new digital business models (Montasser et al., 2023). On the other hand, ambidextrous leadership style the ability to balance innovation exploration with exploitation of existing business activities has also proven effective in the context of external pressures; research shows that ambidextrous leadership contributes positively to DBMI and company performance through increased organizational agility, particularly in the Indonesian telecommunications sector during the COVID-19 pandemic (Bawono et al., 2022).

These findings are consistent with the broader literature that places digital commitment and leadership vision as the main drivers of business model transformation during crises and periods of continuous digital change, showing that entrepreneurial capabilities and organizational learning facilitated by leadership can result in business model innovations that survive after the crisis (Kronblad & Envall Pregmark, 2024). In summary, the evidence shows two main pathways of leadership influence on DBMI in SMEs: (1) through the formation of organizational readiness and technological capabilities triggered by transformational leadership; and (2) through the ambidextrous ability of leaders to balance exploration and exploitation, thereby increasing agility and acceptance of new digital business models (Bawono et al., 2022; Kronblad & Pregmark, 2024; Montasser et al., 2023).

Organizational Capabilities and Readiness

Organizations that have capabilities and readiness in utilizing digital technology demonstrate higher adaptive and innovative performance in designing digital business models. Empirical research in Indonesia found that dynamic capabilities act as an intermediary mechanism linking transformational leadership with the success of digital business model innovation, so that organizations led by visionary and supportive IT leaders are better able to realize digital business model innovation (DBMI) through the strengthening of information technology-based capabilities (Montasser et al., 2023). In addition, organizational readiness including digital infrastructure, workforce competencies, and innovation culture has a direct impact on the ability to implement business model changes; findings from a study of SMEs show that entrepreneurial leadership and government support encourage DBMI when the internal readiness base is adequate.

A systemic approach to DBMI is recommended to understand the complexity of interactions between technology, processes, and stakeholders so that organizations can more effectively adjust their strategies and structures in response to digital dynamics (Kurti et al., 2021). Furthermore, research on the dimensions of digital transformation states that the breadth and depth of digitization can modify the relationship between knowledge distance and political barriers with the risk of subsidiary exit, emphasizing that the intensity of digital transformation affects organizational outcomes in the context of cross-unit networks and internal politics (Zhou & Wang, 2025). In summary, evidence shows that a combination of IT-based dynamic capabilities, infrastructure readiness, and human resources, as well as a systemic understanding of the innovation process, are prerequisites for SMEs to move quickly and effectively in adopting and developing digital business models (Kronblad & Pregmark, 2024; Montasser et al., 2023;

Zhou & Wang, 2025).

Government Support and Policies.

A supportive external environment—particularly the role of the government and stakeholders—is often an important driver for accelerating digital business model innovation (DBMI) in SMEs. Policy support in the form of digital infrastructure development, incentives for technology adoption, training programs, and business assistance can enrich technology adoption capacity and reduce barriers to DBMI implementation. Empirical evidence shows that government support is positively and significantly associated with the occurrence of digital business model innovation in SMEs, as reflected in go-digital assistance programs, access to technology financing, and a regulatory framework conducive to the digital economy. However, the influence of external support is not universal; some studies report insignificant results depending on the sector context and intervention characteristics. For example, a study on government intervention in digital business innovation practices found that the influence varied significantly according to the industry context and program design (Liang et al., 2023). These differences in results emphasize the need for contextual analysis of the form, quality, and suitability of public support to the needs of the target sector in order to maximize the impact on DBMI (Trischler & Li-Ying, 2023). Therefore, effective policy formulation needs to combine financial incentives, infrastructure development, and human capacity building programs tailored to the characteristics of the sector and the level of readiness of SMEs, so that external support truly encourages the adoption and innovation of digital business models in a sustainable manner.

Institutional and Regulatory Pressure.

External pressures in the form of regulations and market demand are often important drivers for business model transformation towards digital forms. Empirical literature shows that institutional pressures such as regulatory requirements for sustainable practices or industry norms can encourage companies to engage in digital business model innovation (DBMI) in order to improve green performance and compliance with applicable environmental regulations (Liang et al., 2023). Similar impetus comes from increasingly digital consumer preferences, online platform competition, and customer expectations for digital channels and services; these factors force SMEs to rearrange how they create, offer, and capture value in order to remain relevant in the digital marketplace (Williamsson, 2023).

However, the influence of external pressures is not always homogeneous: the effect of regulation or public support on innovation depends on policy design, sector context, and business characteristics; in other words, well-designed regulations can trigger innovation that offsets compliance costs, while less appropriate policies may not produce the expected innovative response (Williamsson, 2023). Therefore, the response of SMEs to external pressures is the result of an interaction between institutional forces and the internal capacity of organizations including dynamic capabilities, digital readiness, and market orientation which together determine their ability to effectively change their business models (Liang et al., 2023). In practical terms, policy-making that is sensitive to sector needs and support that strengthens internal capabilities is expected to increase the probability that external pressures will lead to meaningful and sustainable DBMI for SMEs (Williamsson, 2023).

External Shocks and Crises

External shocks such as crises can be powerful drivers of rapid shifts toward digital business model innovation. The COVID-19 pandemic is a prime example of a shock that forced many organizations to make unexpected changes; studies show that the crisis acted as a catalyst that shifted the priorities of companies in Germany, causing them to reallocate resources to adopt digital solutions (Kronblad & Pregmark, 2024) . In survival mode, organizations tend to shift their focus to survival and the utilization of existing resources, motivating entrepreneurial actions such as process digitization, digital product development, and business model restructuring (Oh et al., 2025). Similar results were found in Indonesia, where digital transformation of business models became the main pathway for SMEs to maintain operations during social restrictions and physical store closures; businesses shifted to online platforms, adjusting their value propositions (e.g., delivery services for restaurants, e-commerce sales for small retailers) (Kurti et al., 2021).

Conceptual literature emphasizes that crisis pressures can accelerate organizational learning and the formation of digital capabilities that persist after the crisis has passed, so that some innovations remain relevant in the long term even if some offerings are temporary (Montasser et al., 2023). In practice, evidence shows that adaptability, digital readiness, and proactive leadership determine how effectively organizations leverage crises as catalysts for business model digitalization; without adequate internal capabilities, opportunities arising during external shocks may not materialize into sustainable business model changes (Witschel et al., 2023).

2. Implementation Strategies and Forms of DBMI in SMEs

The second theme relates to how SMEs innovate digital business models, including the strategies, approaches, and forms of innovation adopted. Various studies have explored the concrete steps taken by SMEs in transforming their business models using digital technology.

Table 4. Implementation Strategies and Forms of DBMI in SMEs

Focus Theme / DBMI Strategy	Approach / How SMEs Innovate
Digitalization of Business Processes & Services	Adopting digital platforms and online channels for core business and operational processes.
Value Proposition & Customer Service Innovation	Changing/adding value offerings through more relevant digital products and services.
Revenue Model & Cost Structure Changes	Redesigning ways to generate revenue and manage costs based on digital technology.
Holistic vs. Partial Approach in DBMI	Integrating changes in several/all elements of the business model (value creation, proposition, delivery, capture).
Collaboration & Digital Ecosystem Partnerships	Networking with other actors in the digital ecosystem to overcome resource limitations.

Business Process and Service Digitalization

One of the main approaches is to integrate digital channels into core business activities. Many SMEs are innovating by shifting from conventional practices to electronic commerce and mobile-based commercial models to expand their market share and simplify customer service (Liu & Xie, 2025; Trischler & Li-Ying, 2023). For example, retailers that previously relied solely

on physical stores are now building online outlets or registering on marketplace platforms, while culinary businesses are utilizing online ordering applications and professional service providers are promoting their services through digital channels (Trischler & Li-Ying, 2023). In addition, digital transformation also includes the digitization of internal processes, such as the adoption of Enterprise Resource Planning (ERP) systems suitable for the scale of SMEs, the use of digital payment systems, and production automation that relies on the Internet of Things (IoT) to improve operational efficiency and supply chain traceability (Beliatis et al., 2021). Empirical evidence shows that the application of IoT in the production chain can drive more sustainable business model innovation in the manufacturing sector, indicating that Industry 4.0 technologies (including IoT, big data, cloud, and AI) at the operational level often form the basis for creating new value or efficiencies that transform companies' business models (Beliatis et al., 2021). In summary, the use of digital technology in both the front-end and back-end of business enables SMEs to redesign their offerings and processes, contributing to digital business model innovation in response to market opportunities and efficiency demands.

Innovation in Value Proposition and Customer Service

DBMI in SMEs is often realized through product and service innovations that integrate digital components to redefine the value proposition for customers. For example, small-scale manufacturing businesses can add IoT-based services such as monitoring product conditions in the field as part of a servitization strategy to provide sustainable functions and added value to physical products (Rummel et al., 2022). In the tourism sector, SME players are shifting from traditional offerings to digital experiences such as virtual tours and online booking systems thereby expanding and personalizing the value packages offered to tourists (Kronblad & Pregmark, 2024). Empirical evidence from crisis situations, including the COVID-19 pandemic, shows that startups and companies that are able to quickly modify their value propositions for example, by adding digital service features or adjusting products to meet consumer emergency needs tend to be more successful in maintaining and even growing their market share during environmental disruptions (Rodrigues & de Noronha, 2023).

Therefore, the lesson for conventional SMEs is the importance of innovation agility: the ability to redesign the composition of product and service bundles by injecting digital elements, which requires leadership that supports transformation, organizational readiness, and systemic thinking in the innovation process so that business model changes can be carried out in a structured and sustainable manner (Montasser et al., 2023). In summary, DBMI in SMEs is not merely the adoption of technology, but rather the reengineering of value propositions through a combination of physical and digital services that are responsive to market dynamics and institutional pressures (Liang et al., 2023).

Changes in Revenue Models and Cost Structures

SMEs often reengineer their revenue mechanisms and cost structures through the use of digital technology, thereby creating new ways of capturing value. For example, some businesses are shifting from one-time transactions to digital platform-based subscription models to create recurring revenue streams, while others are exploiting non-physical assets such as customer data or digital content as new sources of monetization (Kronblad & Pregmark, 2021; Trischler & Li-Ying, 2022). On the cost side, automation and digital marketing enable reductions in operational expenses automation can reduce the need for direct labor, while digital marketing is often more

efficient than conventional promotion which ultimately improves margins and changes the value-sharing ratio between businesses and customers (Kurti et al., 2021; Montasser et al., 2023).

Thus, innovation in value capture often intersects with changes in other elements of the business model; the addition of digital services, for example, requires new platform infrastructure for delivery and adjustments to the value proposition to align with the desired revenue model Kurti et al., 2021; . Empirical studies confirm that DBMI encompasses aspects of value capture through digital revenue mechanisms and not merely the creation or delivery of value is a perspective that underscores the importance of organizational capabilities, technological readiness, and adaptive leadership for this shift to be effectively realized in SMEs (Trischler & Li-Ying, 2022; , Montasser et al., 2023). Therefore, successful digital transformation in SMEs is not just a matter of installing technology, but of redesigning the combination of value proposition, delivery, and capture in an integrated manner so that the new business model can be sustainable and provide competitive advantage (Kronblad & Pregmark, 2021; , Kurti et al., 2021; , Montasser et al., 2023).

Holistic vs. Partial Approach

The success of digital business model innovation (DBMI) for SMEs requires a holistic approach that transforms the entire business model framework, rather than just partial interventions in one or two components. Literature evidence shows that integrating core elements of the business model value proposition, value delivery channels, value capture mechanisms, and internal activities and resources produces more coherent and impactful changes than simply adding digital channels

(Kurti et al., 2021). Best practices documented in case studies describe a coordinated series of actions: developing new digital products or services, marketing them through online platforms, redesigning payment mechanisms (e.g., pay-per-use or subscription schemes), and restructuring internal processes to support digital operations. This combination of changes ensures that the promised value can be delivered and captured effectively. Kurti et al. emphasize the importance of systems thinking to map the complexity and interdependence between business model components so that innovation does not get stuck in functional silos; this approach allows SMEs to understand the cross-impact between elements when one of them is changed (Kurti et al., 2021). Therefore, DBMI planning should involve diagnosing dependencies between business model elements, designing a coordinated transformation roadmap, and using systemic analytical tools to test change scenarios these steps help minimize the risk of innovation fragmentation and increase the chances of creating sustainable competitive advantage (Trischler & Li-Ying, 2022).

Collaboration and Ecosystem Partnerships

SMEs are increasingly leveraging partnerships within the digital ecosystem to overcome resource constraints and accelerate digital transformation. The literature shows that partnerships with large platforms such as marketplaces, ride-hailing services, or fintech providers enable SMEs to expand their market reach and utilize existing digital infrastructure so they can focus on their core capabilities. Rodrigues and Noronha highlight three key steps relevant to small businesses: adopting new digital platforms, expanding partner networks, and adjusting payment services; these steps underscore the importance of synergies with external actors (e.g., fintech for payment solutions) to accelerate business model innovation (Rodrigues & Noronha, 2021). In addition,

open innovation practices have emerged as a strategy for SMEs, including involving customers in the co-creation of digital products and utilizing online communities as a source of ideas, which enriches innovation capacity amid technological acceleration (Kurti et al., 2021).

The results of the research synthesis indicate that the implementation of DBMI in SMEs is diverse but patterned: utilizing digital technology to create new value, improve operational efficiency, and expand markets—as well as combining changes in offerings, customer interactions, operations, and revenue mechanisms so that the transformation has a real impact (Wang et al., 2025). The success of this transformation depends on organizational agility and alignment between business model components; without internal coordination and external synergy, digital initiatives risk fragmentation and fail to capture the full value of change (Trischler & Li-Ying, 2022). Therefore, the formation of strategic partnerships, platform adoption, ecosystem engagement, and co-creation practices are recommended as practical pathways to strengthen the capacity of SME DBMI and achieve sustainable results.

3. The Impact of DBMI on SME Performance and Competitiveness

The next theme that has been widely discussed is the benefits or impacts that SMEs gain from digital business model innovation. In general, the literature shows the positive impact of DBMI on various aspects of MSME performance, although the extent of this impact may vary between contexts.

Table 5.
The Impact of DBMI on SME Performance and Competitiveness

DBMI Impact Dimension	Summary of Main Impact
Financial Performance & Growth	DBMI improves sales performance, profitability, and long-term growth potential.
Competitive Advantage & Market Position	DBMI strengthens the competitive position of SMEs in the digital market, even compared to large companies.
Business Resilience in Times of Crisis	DBMI enhances SMEs' ability to survive and adapt during crises or external shocks.
Sustainability Performance	DBMI has been linked to improved environmental and social performance of companies.
Industry Structure & Business Network	DBMI changes SMEs' position in the supply chain and industry networks, including access to global markets.
Organizational Learning & Human Resource Capabilities	DBMI promotes long-term learning, innovation culture, and improvement in employees' digital skills.

Improved Financial Performance and Growth.

Many studies show that the adoption of digital business model innovation (DBMI) contributes to improved performance of small and medium-sized enterprises. Ahmad et al. found that DBMI is an important factor in achieving superior performance for SMEs; in their study, SMEs with higher levels of DBMI showed better sales and growth compared to those that were less innovative. The mechanism is that DBMI expands customer reach, adds value to products/services, and improves operational efficiency, thereby positively impacting revenue and profitability. Similar findings from other sectors support this generalization. (Bawono et al., 2022) found a significant positive effect of digital business model innovation on the performance of telecommunications companies during the pandemic, indicating that digital innovation helps

maintain performance in challenging external conditions and that the implications are relevant for SMEs. Beyond short-term financial benefits, DBMI is also associated with long-term growth potential because digital-based models tend to be more scalable and capable of capturing broader market opportunities (Kronblad & Pregmark, 2021). Therefore, the literature suggests that SMEs integrate DBMI elements from offerings to value capture mechanisms to achieve sustainable performance benefits and resilience to external disruptions (Trischler & Li-Ying, 2022).

Competitiveness and Competitive Advantage.

Digital business model innovation (DBMI) provides a competitive advantage for SMEs by enabling more unique value propositions and more efficient operations in the digital economy era. Research shows that the benefits of technology such as AI adoption depend on a combination of organizational factors such as digital capabilities and data quality, as well as the existence of DBMI itself; without business model reengineering, the application of advanced technology does not automatically result in competitive advantage (Mi et al., 2023). Empirical results also show that business model transformation strengthens a business's position against competitors, including large companies, because new models enable digital scale, service differentiation, and more effective value capture mechanisms (Williamsson, 2023, Wang et al., 2025). Other studies show that organizational capabilities (digital readiness, transformational leadership) and supporting ecosystems accelerate the realization of the advantages promised by DBMI. This indicates that technology strategies must be accompanied by strengthening internal resources and processes (Montasser et al., 2023; Witschel et al., 2023). Thus, DBMI plays a key role in competitive strategy: technology must be complemented by organizational capabilities and business model redesign to transform technology adoption into sustainable competitive advantage (Montasser et al., 2023; Mi et al., 2023; Williamsson, 2023).

Business Resilience in Times of Crisis.

DBMI has been proven to increase the resilience of SMEs against external shocks by accelerating operational adaptation and value models to digital formats. During the COVID-19 pandemic, small businesses that quickly moved their sales and service activities to online platforms, changed their product portfolios, and implemented digital payments were better able to maintain cash flow and operations than those that remained dependent on conventional channels (Kronblad & Pregmark, 2021; . Rodrigues & Noronha show that innovation in digital business models can mitigate the negative impacts of economic crises, minimizing losses through timely and swift business pivots (Rodrigues & Noronha, 2021). The underlying mechanism is increased strategic agility: digitized business models facilitate experimentation, rapid scaling, and resource relocation to meet new demand when market conditions change suddenly (Kronblad & Pregmark, 2021; Witschel et al., 2023). Evidence from the field during lockdown shows that SMEs that rely on digital services such as online consultations, sales via social media, and platform-based delivery are replacing lost revenue from physical channels and maintaining business continuity. Therefore, developing a DBMI is not merely a technical step, but a resilience strategy that combines changes in offerings, channels, and internal processes so that SMEs can respond and survive during periods of external disruption (Wang et al., 2025).

Sustainability Performance.

Many recent studies link digital business model innovation (DBMI) with improved

corporate sustainability performance, including environmental and social aspects. (Liang et al., 2023) report that DBMI acts as a mediator linking institutional pressures related to sustainability with improvements in corporate environmental performance, indicating that digital transformation of business models can drive concrete green outcomes. Under environmental regulatory pressure, companies, including potential manufacturing SMEs, are implementing digital-based changes such as more energy-efficient processes or IoT-connected "green" products that have an impact on reducing emissions and waste (Liang et al., 2023). These findings show that DBMI is not only profit-oriented but can also be aligned with sustainability agendas through the redesign of offerings, channels, and operations. SMEs that adopt sustainable digital models, such as platforms for the circular economy or sharing mechanisms, have the opportunity to gain reputational and regulatory compliance benefits, as well as access to markets that prioritize environmentally friendly products (Oh et al., 2025). However, the literature on the relationship between DBMI and sustainability performance is still developing; the number of empirical studies and detailed understanding of causal mechanisms is relatively limited, so further research is needed to map out how specific DBMI elements consistently drive environmental and social outcomes (Trischler & Li-Ying, 2022).

Various Other Implications.

Business model transformation through digitalization affects the industrial structure and business networks of SMEs, including changes in the supply chain and relationships with suppliers and customers. With digitalization, SMEs can more easily access international markets or join digital supply chain platforms that increase visibility and marketing opportunities, thereby significantly changing their role and position in the industrial network (Wang et al., 2025). In addition, the DBMI process supports long-term organizational learning; organizations become more adaptive, a culture of innovation develops, and workers acquire new digital skills during the transformation process—indirect effects that strengthen the company's core capabilities to face future challenges (Montasser et al., 2023).

Overall, the literature shows that DBMI tends to provide positive benefits for SMEs in terms of financial performance, competitiveness, and business resilience; although implementation requires considerable effort, results such as operational efficiency, broader market access, and the ability to survive disruptions make DBMI a promising strategy for the sustainability of SMEs in the digital era. However, the specific impact depends on the industry context and the quality of innovation implementation: variations in results across sectors and differences in internal capacity indicate that the success of DBMI is not automatic, but rather depends on organizational readiness, the partner ecosystem, and appropriate implementation design (Rummel et al., 2021; Kohtamäki et al., 2025).

4. Challenges and Obstacles of DBMI in SMEs

Despite offering significant benefits, the implementation of DBMI in SMEs is not without challenges and obstacles. The literature identifies various constraints faced by SMEs in innovating digital business models, both from internal limitations and external factors.

Table 5.
Challenges and Obstacles of DBMI in SMEs

Challenge Category	Main Aspect	Description
Internal	Resource Limitations (financial, HR, technology)	SMEs lack capital for investment in technology/digital infrastructure, limited digital skills, and weak dynamic capabilities.
Internal	Resistance to Change & Organizational Culture	The "if it ain't broke, don't fix it" attitude, employee fear of technology, and a culture that does not support experimentation hinder business model transformation.
External	Technology & Infrastructure Barriers	Weak digital infrastructure (slow/expensive internet, limited service providers, underdeveloped payment ecosystems) complicates the implementation of digital business models, especially in developing countries/rural areas.
Internal (Strategic)	Trade-off with Existing Operations	Developing a digital business model often conflicts with the old model: resources, management focus, and business risks.
Mixed (Internal-External)	Uncertainty & Innovation Risk in DBMI	The new digital environment is not fully understood by SMEs, and the market's response is uncertain, leading to high failure risk and significant uncertainty.

Resource Constraints (Financial, Human Resources, Technology).

SMEs often face capacity constraints when attempting to digitally transform their business models; financing constraints are a major obstacle because investments in technology, IT infrastructure, and platform development are often beyond the reach of small businesses (Wang et al., 2025). In addition, a lack of human resources with digital skills complicates the design and operation of new business models, while low digital literacy among owners or managers slows down the innovation adoption process (Wang et al., 2025; Montasser et al., 2023). Montasser et al. note that organizations that are weak in dynamic capabilities that is, the ability to integrate, build, and reconfigure internal competencies as changes occur find it difficult to develop or adapt DBMI, making this limitation a significant obstacle for SMEs (Montasser et al., 2023). The literature also shows that without organizational readiness, transformational leadership support, and adequate resources, business model digitalization efforts are prone to failure or stalling in the early stages of implementation (Rummel et al., 2021). Therefore, efforts to improve access to financing, programs to increase digital literacy and skills, and strengthening the dynamic capabilities of organizations are recommended to reduce barriers—creating an environment that enables SMEs to realize the potential of DBMI more broadly and sustainably (Rummel et al., 2021).

Resistance to Change and Culture.

Human and organizational culture factors often pose significant barriers to the implementation of digital business model innovation (DBMI) in SMEs. The conservative attitudes of stakeholders—such as the belief that old models are still adequate lead to resistance to radical change, while employee concerns that automation will erode jobs or simply comfort with old practices reduce internal support for digital initiatives. Witschel et al. (2023) emphasize that many DBMI challenges stem from the individual, process, and structural levels; concrete examples include employees who are reluctant to learn new technologies, rigid business procedures, and organizational structures that do not facilitate experimentation, thereby hindering the development of digital capabilities. Furthermore, case studies in family-managed sectors show that a corporate culture with low risk tolerance makes it difficult to test new business models because owners are reluctant to accept the uncertainty of innovation outcomes. Literature examining the role of leadership and organizational readiness also shows that without

transformational leadership support and dynamic capability strengthening, DBMI efforts tend to be hampered by cultural factors and human resource barriers. Therefore, cultural change, digital skills training, and structures that encourage experimentation are essential prerequisites for the effective implementation of DBMI.

Technological and Infrastructure Constraints.

In a number of contexts, especially in developing countries and remote areas, limited digital infrastructure is a significant external barrier to the transformation of SME business models. Sporadic or slow internet connectivity, high bandwidth costs, the absence of local technology service providers, and a weak supporting ecosystem, such as reliable payment gateways, make the implementation of digital solutions difficult and difficult to scale. The case of Cameroon reflects this dilemma: even though opportunities for digital business models exist, infrastructure and business environment issues hinder the growth and sustainability of these initiatives. In addition, unsupportive policies or regulations, such as complex e-commerce tax rules or burdensome compliance requirements, can add to the operational burden and reduce the incentive for SMEs to innovate digitally.

Thus, the success of business model digitization depends not only on the intentions and internal capabilities of SMEs, but also on conducive external conditions: the availability of telecommunications infrastructure, reliable digital payment services, and regulations that facilitate (rather than hinder) technology adoption. Public policy efforts and infrastructure investment are needed to remove these barriers so that the potential for business model digitalization in SMEs can be realized more broadly and sustainably.

Trade-offs with Existing Operations.

Digital business model innovations often disrupt old models, leaving SMEs facing a dilemma when running both simultaneously. Incumbent companies must weigh the trade-off of resource allocation between investing in digital initiatives and maintaining their core business; this conflict encompasses financing, labor, and managerial focus. For SMEs with limited resources, operating a dual parallel model poses a significant burden: switching entirely to the new model risks losing existing revenue if it fails, while maintaining the old model could leave them digitally behind. Therefore, transition management through measured pilots, protection of old revenue streams, and strong leadership is key to navigating the risks and opportunities of digital business model change (Kurti et al., 2021).

Uncertainty and Risk.

Entering the realm of digital business models means that SMEs are entering a new area that they may not fully understand, resulting in a high level of uncertainty. The risk of failure is considerable: for example, investment in a digital platform itself could fail if customers do not migrate to it, or if the new business model does not generate the expected revenue. Unlike large companies, which may have capital buffers, failure to innovate can directly threaten the survival of SMEs. This factor sometimes makes SMEs hesitant or delay DBMI. They tend to wait for clear evidence or examples of best practices before trying, resulting in innovation lagging behind.

Security and Trust Issues.

Some SMEs, especially in developing countries, face trust challenges in the digital realm.

Examples include customers who do not yet trust online shopping, business partners who are reluctant to conduct digital transactions due to cybersecurity issues, etc. Awa et al. (2015) in Nigeria found critical factors that hinder the adoption of e-commerce by SMEs, including concerns about the security and trustworthiness of digital transactions. If SME customers themselves are not yet willing to switch to digital channels, the digital business model innovations carried out by SMEs may fail to achieve results. Thus, social factors and market trust also affect the smooth running of DBMI.

Discussion

Theoretical Implications

This literature review highlights several important theoretical implications for management studies related to digital business model innovation (DBMI) in SMEs. *First*, the synthesis results reinforce the need for a cross-disciplinary approach; the dynamic capabilities framework is relevant for explaining how small entities develop, combine, and reorganize their internal competencies to be able to adapt digitally. Dynamic capabilities emerge as a central mechanism in ensuring the sustainability of DBMI (Montasser et al., 2023; Witschel et al., 2023). Furthermore, the Resource-Based View (RBV) perspective remains useful: SMEs that possess distinctive resources such as specialized digital knowledge or family networks can drive business model innovation even under external pressure, supporting the argument that idiosyncratic resource endowments drive strategic responses to disruption (Montasser et al., 2023).

Second, the findings confirm the role of strategic leadership and entrepreneurial orientation: top leadership characteristics (visionary, proactive) and entrepreneurial attitudes influence the initiation and speed of DBMI, in line with Upper Echelons theory and research showing the mediating role of leadership in the development of IT-enabled capabilities (Montasser et al., 2023; , Bawono et al., 2022). External pressures such as public policy can be analyzed through the lens of institutional theory, which explains how regulatory pressures and norms drive the adoption of DBMI for organizational legitimacy (Liang et al., 2023).

Third, this review enriches the Business Model Innovation literature by incorporating a digital dimension: digital transformation acts as an enabler that changes the logic of business models, not merely the digitization of supporting processes this distinction emphasizes that digitization is a strategic phenomenon that needs to be understood in BMI theory (Trischler & Li-Ying, 2022). Fourth, the heterogeneity of findings (e.g., varying effects of government support) indicates the need for a contingency or configuration approach; evidence from fsQCA studies shows that there are several combinations of factors that can lead to DBMI success (equifinality), making multi-theory or configurative models more appropriate for capturing its complexity (Mi et al., 2023).

Finally, the focus on SMEs requires adjustments to management theories that have been developed for large companies. the results of this review provide an empirical basis for modifying or testing theories to suit the characteristics of SMEs (resource constraints, flat structure, ownership orientation), while encouraging the development of a specific conceptual framework for "Digital Business Model Innovation in SMEs" that comprehensively integrates individual, organizational, and institutional factors (Wang et al., 2025).

Practical Implications

This review yields several practical implications that can be immediately applied by

MSME entrepreneurs and stakeholders to accelerate digital business model innovation. For MSME entrepreneurs, the main recommendation is to foster pro-digital leadership: owners and managers need to improve their digital literacy, adopt an entrepreneurial mindset that is open to change, and take the initiative to integrate technology into their business models. Measured investment in digital capabilities—through staff training, recruitment of young talent, or small-scale IT infrastructure development—can strengthen competitiveness even with limited resources, while collaboration strategies (joining e-commerce platforms, partnering with fintech) reduce the risks of developing solutions independently (Montasser et al., 2023).

For policymakers, the findings emphasize the need for structural support: the provision of equitable digital infrastructure, regulations that facilitate the digital economy, and subsidy or training voucher programs can reduce barriers to DBMI adoption by SMEs. The government can also build a learning ecosystem (technology parks, incubators, co-working spaces) to accelerate knowledge transfer and collaboration among actors (Kronblad & Pregmark, 2021; Liang et al., 2023).

Supporting institutions such as universities and incubators are advised to provide practical training modules e.g., use of the digital version of the Business Model Canvas, technology impact simulations, and implementation consultations while the financial sector needs to design financing products that specifically support SME digital transformation projects (technology microcredit, capex subsidies, or special crowdfunding) to close the initial capital gap (Witschel et al., 2023).

At the organizational level, change management must be an integral part: communicate the digital vision, involve employees in co-creation to reduce resistance, and use small-scale pilots to score quick wins before scaling up. A combination of internal initiatives, external support, and access to financing will increase the chances of DBMI success and boost the competitiveness of SMEs in the digital era (Montasser et al., 2023; Wang et al., 2025).

Limitations and Future Research Agenda

This review identifies several important research gaps that need to be expanded upon. First, there is a need to expand the geographical coverage and types of SMEs: current studies are heavily weighted toward Asia and Europe, while Latin America, the Middle East, and many parts of Africa, as well as the micro/informal segments, remain under-explored; case studies of microenterprises in traditional sectors could reveal the unique dynamics of DBMI at the smallest scale (Rummel et al., 2021). Second, longitudinal and processual studies are needed to capture the development of DBMI over time and identify critical stages, as pioneered by serial research on crises (Montasser et al., 2023). Third, DBMI measurement is still not standardized; the development of a maturity index or valid quantitative instruments is important for assessing the intensity and success of digital business model transformation (Trischler & Li-Ying, 2022).

Fourth, the relationship between DBMI and non-financial performance (customer satisfaction, reputation, environmental/social performance) is still limited although there are indications that DBMI can mediate better environmental performance, specific evidence for SMEs needs to be strengthened (Liang et al., 2023). Fifth, the influence of specific technologies (AI, IoT, blockchain) on the types of DBMI varies and requires exploration of pioneering SME cases to clarify adoption patterns and the value created (Mi et al., 2023). Sixth, the relationship between economic platforms and DBMI requires theoretical and empirical clarification whether involvement in the platform ecosystem is a form of DBMI or merely a channel as well as the

implications of platform dependence on SME autonomy (Rodrigues & Noronha, 2021). Seventh, applied research examining mitigation strategies (effective training, funding schemes, effective public policies) is urgently needed to generate policy recommendations and tested practices (Witschel et al., 2023). Finally, this review study is limited in terms of time frame and keywords; the above research agenda is expected to fill the gaps and deepen understanding of DBMI in SMEs).

CONCLUSION

This structured review has presented an overview of research on digital business model innovation (DBMI) in SMEs during the period 2015–2025, as well as identifying a number of key thematic areas and their key findings. In terms of volume, research on DBMI–SMEs has increased in the last decade, mainly driven by developments in digital technology and the momentum of transformation during the COVID-19 pandemic. Publications on this topic are scattered across various management, entrepreneurship, and information systems journals, with the dominant study context in developing countries in Asia and using various research methods.

This review identified four main themes in the literature: (1) Drivers of DBMI – including visionary leadership, dynamic capabilities, policy support, market pressures, and crises as catalysts; (2) DBMI implementation strategies including adoption of digital platforms, innovation in value propositions, changes in revenue models, holistic approaches to business model elements, and ecosystem collaboration; (3) The impact of DBMI on performance generally positive, improving financial performance, competitiveness, business resilience, and even sustainability aspects; and (4) DBMI challenges – in the form of MSME resource limitations, resistance to change, infrastructure constraints, trade-offs between old and new business models, and uncertainty risks. This synthesis of findings provides a deep understanding that DBMI is an important mechanism for SMEs to remain relevant in the digital era, but requires certain supporting conditions to be successful.

From this review, a number of theoretical implications emerge, including the importance of integrating the perspectives of dynamic capabilities, RBV, leadership theory, and institutional theory into the conceptual framework of DBMI in SMEs. Meanwhile, practical implications emphasize the strategic role of MSME leaders in driving innovation, the need for intensive government support to build an MSME digital ecosystem, and the importance of good internal change management at the MSME level. Several research gaps have also been identified that can be filled by future studies, such as expanding the geographical context, longitudinal approaches, DBMI measurement, non-financial impacts, links to specific technologies, and exploration of strategies to mitigate challenges.

Overall, this review contributes by presenting a comprehensive and structured map of the development of DBMI–MSME literature. For researchers, this map helps to understand what is already known and which areas still require further investigation. For practitioners and policymakers, these findings provide insights into which factors need to be strengthened and which steps are effective in driving digital business model transformation in the MSME sector. The hope is that SMEs can leverage digital business model innovation as a strategy for sustainable and competitive growth amid an increasingly digitized business landscape. By recognizing the patterns, challenges, and opportunities revealed in the literature, stakeholders can make more informed and evidence-based decisions in the journey toward the digital transformation of MSME business models going forward.

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