



Analysis of Digital Transformation in MSMEs to Support Local Economic Growth

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Abstract

Background: MSMEs are crucial for employment and economic growth, but must adopt and effectively use digital technology to stay competitive. **Objective:** This study aims to analyze the effectiveness of digital technology adoption among MSMEs in accelerating local economic growth.

Methods: Following the PRISMA 2020 guidelines, a systematic literature search was conducted using Google Scholar, the Directory of Open Access Journals (DOAJ), and SINTA-indexed journals. Boolean search strings, such as “digital transformation” AND “MSME” AND “local economic growth,” were applied. Open-access articles published in Indonesian or English between 2021 and 2026 were included. From an initial pool of 47 records, 18 articles met the inclusion criteria and were examined through qualitative thematic synthesis.

Results: The thematic synthesis of the 18 articles identified three dominant mechanisms through which digital transformation strengthens MSME performance: (1) market expansion through e-commerce and digital marketing, (2) improved operational efficiency through cloud-based management systems, and (3) increased economic participation facilitated by financial technology (fintech) adoption. The quantitative studies reported productivity gains of up to 30% and sales increases of up to 60% among digitally transformed MSMEs. However, the effects varied across regions and business sizes and were influenced by the availability of digital infrastructure and the organizational readiness of MSMEs.

Conclusion: Digital technology helps MSMEs expand market reach and improve efficiency, profitability, and resilience, contributing to local economic growth through increased activity and employment. However, its adoption is still hindered by limited digital skills, unequal infrastructure, restricted capital access, and weak organizational strategies.

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INTRODUCTION

The contribution of micro, small, and medium-sized enterprises (MSMEs) to Indonesia's economic stability is substantial, particularly because of their capacity to absorb labor. In addition to helping reduce unemployment, this sector provides opportunities for people from all segments of society to participate in productive activities and entrepreneurship. Indonesia's economic growth is highly dependent on the presence of MSMEs. Representing nearly 99 percent of all

business units, MSMEs constitute the most dominant force shaping Indonesia's economic structure. This dominance indicates that a significant proportion of the population's economic activities depends on MSMEs, whether in trade, services, or production. By the end of December 2024, approximately 30.18 million MSME operators were active in Indonesia, according to a report issued by the relevant ministry. These statistics demonstrate the tangible contribution of MSMEs as providers of employment and drivers of community income while also strengthening the country's economic resilience in the face of global pressures and crises.

The labor-intensive nature of MSMEs is the primary reason this sector absorbs a substantial number of workers across the production of goods, distribution processes, and service provision. Unlike large companies, which tend to use technology and machinery on a large scale, MSMEs rely more directly on human resources. The employment opportunities created by this condition are inclusive of people with various skill and education levels, including individuals with limited access to employment in formal institutions (Putri et al., 2024). The extensive reach of MSMEs into remote areas also supports a more equitable distribution of employment opportunities, thereby helping minimize regional economic disparities and unemployment. Therefore, MSMEs should be regarded not merely as ordinary business entities but also as important instruments of community empowerment and national economic stability.

However, developments in the digital era require MSME operators to adapt effectively to technological advancements to maintain business continuity and a competitive advantage in an increasingly competitive market. Digitalization has transformed business practices from conventional operations into technology-enabled processes encompassing production, marketing, and customer service (Munandar, 2022). MSMEs are increasingly required to use digital platforms, such as online marketplaces, social media, and digital payment systems, to expand market access and improve operational productivity (Desi et al., 2025). The adoption of these technologies also enables small-business owners to better understand consumer preferences through data analytics and the rapid monitoring of market trends (Octiva et al., 2024). MSMEs that are unable to keep pace with these developments may experience difficulty competing with businesses that are more responsive to digital innovation. Therefore, adaptability to technological change is a key factor in enabling MSMEs to survive, grow, and operate sustainably in the contemporary business environment.

Despite the growing body of literature on MSME digitalization, a critical research gap remains. Most existing studies in the Indonesian context are descriptive and lack a systematic synthesis examining variations in the effects of digital transformation across MSME sectors, regions, and firm sizes. Furthermore, the causal pathways through which digital transformation contributes to local economic growth remain underexplored (Anatan & Nur, 2023; Verhoef et al., 2021). This systematic literature review (SLR) addresses this gap by synthesizing 18 empirical and review-based studies through a structured approach guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Specifically, the review aims to identify the dominant mechanisms, contextual moderating factors, and barriers that determine the effectiveness of digital transformation in promoting MSME-driven local economic growth in Indonesia.

METHOD

The systematic literature review (SLR) approach was employed in this research. This method is a research procedure conducted in an organized and standardized manner to identify, collect, evaluate, and synthesize findings from various scholarly works relevant to a particular topic. It emphasizes transparency and objectivity through the use of a clearly documented protocol, enabling each stage of the research, from the literature search process to the presentation of the results, to be reexamined and replicated by other researchers. The SLR method enables researchers to comprehensively summarize the development of research on a particular topic, ensuring that all findings and conclusions are based on credible and verifiable scientific evidence. This study followed the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) reporting guidelines Page (2021) to ensure transparency and replicability. Literature searches were systematically conducted across three academic databases: Google Scholar, the Directory of Open Access Journals (DOAJ), and the Science and

Technology Index (Sinta). The following Boolean search string was applied: (“digital transformation” OR “digitalization”) AND (“MSME” OR “SME” OR “small business”) AND (“local economic growth” OR “regional economy” OR “economic development”). The search was limited to full-text, open-access publications written in Indonesian or English and published between January 2021 and April 2026.

The selection of reference sources focused on studies examining digital transformation in MSMEs, the benefits of information technology for business expansion, and the sector’s contribution to regional economic growth. The literature was systematically selected by applying predetermined inclusion and exclusion criteria to ensure that the information collected was valid and aligned with the research objectives. The inclusion criteria comprised journal articles published between 2021 and 2026, written in Indonesian or English, and available as full-text, open-access documents. The exclusion criteria comprised (1) studies focusing exclusively on large enterprises or conglomerates; (2) articles without empirical findings or theoretical contributions; (3) gray literature, such as non-peer-reviewed government reports; and (4) duplicate publications. The initial database search yielded 47 records. After duplicates were removed (n = 8), the titles and abstracts of the remaining 39 records were screened for relevance, resulting in the exclusion of 21 records. The full texts of the remaining 18 articles were subsequently assessed, and all were confirmed as eligible for inclusion. A PRISMA 2020 flow diagram illustrating the article-selection process is presented in Figure 1. The data were analyzed using qualitative descriptive methods and a thematic synthesis approach. This process involved identifying, organizing, and categorizing findings from previous studies and comparing them according to the central themes associated with digital transformation in the MSME sector. The identified themes included the adoption of digital technologies, increased business competitiveness, operational efficiency, market expansion, and barriers to digitalization.

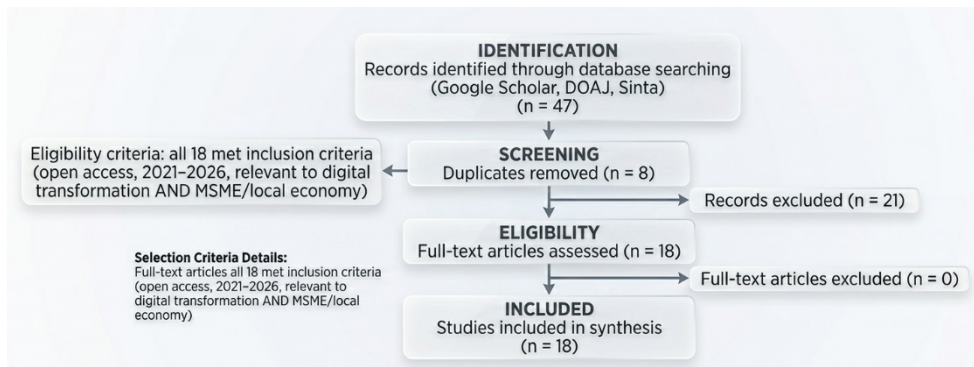


Figure 1. PRISMA 2020 Flow Diagram: Article Selection Process

Source: Adapted from Page (2021), PRISMA 2020 Statement

RESULTS AND DISCUSSION

Results

Table 1. Literature Review on Digital Transformation in MSMEs to Support Local Economic Growth

Author & Year	Research Objective	Study Design	Approach	Main Findings
Radicic (2023)	To explore the impact of digitalization on technological innovation in SMEs in Germany	Survey	Quantitative	The study results indicate that the influence of digitalization on innovation has varying characteristics, aligned with the type of

				<p>innovation developed and the intensity of technology use applied. Digitalization tends to increase product and process innovation in SMEs without internal R&D activities, while in SMEs with active R&D, the effect is insignificant. This finding suggests that internal company strategies moderate the effectiveness of digital transformation.</p>
Galib (2024)	To explore the adaptation of MSMEs to digital marketing	Literature Review	Qualitative	<p>Digitalization helps MSMEs significantly expand market access, increase income, and strengthen their contribution to the local economy. The study also emphasizes the importance of adaptability, continuous learning, and building consumer trust through digital services as key success factors.</p>
Nazar (2024)	To investigate the use of e-commerce in the local economy	Community Service	Qualitative	<p>The implementation of e-commerce has been proven to increase business diversity and expand the</p>

				market reach of MSMEs. Additionally, business actors can overcome geographical limitations, increase operational efficiency, and optimize product distribution through digital platforms.
Astuti (2024)	To analyze the importance of digital transformation for MSMEs	Literature Review	Qualitative	Digital transformation increases the efficiency, productivity, and competitiveness of MSMEs. Further impacts include job creation, increased investment, and a significant contribution to national and local economic growth through market expansion and increased sales volume.
Rauf (2024)	To analyze the role of digital transformation in MSME growth	Literature Review	Qualitative	The use of information technology makes a real contribution to improving service standards, smooth work processes, and the increasingly wide marketing reach of MSMEs. Furthermore, digital transformation also stimulates business model

				renewal that can enhance international-level competitive advantage.
Rusmina (2024)	To examine the optimization of the SME economy in Banda Aceh	Case Study	Qualitative	The research report shows a surge in sales of up to 60 percent as a positive consequence of implementing digital technology among MSMEs. Digitalization also increases distribution efficiency, accelerates transactions, and strengthens the position of SMEs in the local value chain.
Sharabati (2024)	To evaluate the influence of digital marketing on SME performance	Survey	Quantitative	The use of digital marketing instruments is very vital for boosting business success, such as increasing turnover, maintaining customer loyalty, and strengthening brand position in the market. Digital proximity to the audience helps small and medium business actors understand market needs and build more strategic and efficient marketing steps.
Wulan (2024)	To analyze the influence of digitalization on productivity	Literature Review	Qualitative	The use of technologies

				such as e-commerce and cloud-based systems increases productivity by up to 30% and profitability by up to 35%. Additionally, digitalization encourages more efficient and responsive operational management to market changes.
Sofia (2024)	To explore digital technology for efficiency and sustainability	Literature Review	Qualitative	Digital technology helps reduce operational costs, increase supply chain transparency, and support sustainable business practices. Furthermore, digitalization encourages efficient use of resources and waste reduction.
Muzakkir (2024)	To examine the impact of digitalization on the creative economy of SMEs	Literature Review	Qualitative	Digital transformation opens up great opportunities such as increased brand visibility and access to global markets. However, there are significant challenges in the form of limited digital infrastructure, skills gaps, and limited access to financing.
Unegbu et al. (2024)	To analyze the influence of digital transformation on SMEs in Nigeria	Survey	Quantitative	Digital transformation plays a role in

				streamlining business operations, encouraging product innovation, improving customer experience quality, and reducing operational costs. Additionally, SMEs can increase competitiveness through optimizing technology-based business processes.
Jurnalita (2024)	To examine the impact of digitalization through e-commerce and fintech	Literature Review	Qualitative	The use of digital innovation in the MSME environment contributes to simplifying operational processes and expanding business scope, as well as strengthening adaptability to continuously evolving consumer preferences in the digital era.
Faturrahman (2025)	To analyze digital transformation of MSMEs in Dompu	Case Study	Qualitative	Digital transformation increases turnover, expands market reach, and creates new business opportunities. Furthermore, digitalization increases public awareness of local products and strengthens

				the community economy.
Meliawati (2025)	To analyze the role of digitalization in the creative economy	Literature Review	Qualitative	The digitalization process strengthens the position of MSMEs within the creative economy sector by triggering the development of product innovation, optimizing operational performance, and integration into a broader digital ecosystem network that has high competitiveness.
Bahasoan (2025)	To explore the role of digitalization in economic inclusion	Literature Review	Qualitative	The adoption of digital technology increases economic inclusion, productivity, and access to financial services. This strengthens the competitiveness of MSMEs in facing global competition.
Masitoh (2025)	To analyze the impact of digitalization on regional economic growth	Literature Review	Qualitative	Digitalization contributes to increased productivity and local economic growth. However, there are obstacles in the form of infrastructure inequality, low digital literacy, and regulatory limitations.
Fransisca (2025)	To analyze the influence of digitalization on the regional	Survey	Quantitative	Digitalization is recorded to

	economy			contribute 69 percent to improving the performance of the MSME sector. The e-commerce sector is identified as a key factor that strengthens business productivity while supporting economic growth at the regional scale.
Purno (2026)	To analyze the impact of the digital economy on MSMEs	Literature Review	Qualitative	The digital economy provides great opportunities through increased operational efficiency, business process automation, global market access, and ease of access to digital financial services.

Discussion

The shift toward the digital realm plays a major role in advancing MSMEs across various regions. The use of digital technologies, such as internet marketing and cloud storage systems, helps business owners reach consumers in more distant locations, operate more efficiently, and ultimately increase profitability (Galib et al., 2024; Rauf et al., 2024; Jurnalita, 2024). These technologies also make it easier for entrepreneurs to align their business strategies with changing consumer trends, which increasingly favor digital platforms. Furthermore, quantitative evidence confirms a positive correlation between digitalization initiatives and improvements in business productivity and profitability (Sharabati et al., 2024; Unegbu et al., 2024).

The use of digital technology has proven effective in stimulating regional economic growth by strengthening the MSME sector. Digitalization enables small businesses to reach consumers at the national and global levels, thereby increasing revenue and reinforcing local economic structures (Astuti & Rosita, 2024; Masitoh & Mitasari, 2025). Improvements in business performance supported by digital technology also generate broader impacts, including job creation and increased economic activity. Empirical evidence confirms that the adoption of digital tools directly contributes to significant increases in MSME sales (Rusmina et al., 2024).

Digital transformation also encourages innovation and the development of the creative economy. The use of technology enables MSMEs to develop more innovative products and services and facilitates their integration into the digital economy ecosystem (Meliawati et al., 2025). However, the impact of digitalization on innovation is not always uniform. Radicic (2023) demonstrate that the influence of digitalization on innovation is mediated by internal

organizational factors, including research and development activities. This finding indicates that organizational readiness is an important factor in determining the effectiveness of digital transformation.

Several studies have also identified various obstacles to the implementation of digital transformation in the MSME sector. Common challenges include inadequate digital infrastructure, limited technological knowledge, and insufficient technical skills among business owners (Sofia, 2024; Muzakkir et al., 2024). In addition, limited access to financing and technology affects the ability of MSMEs to adopt digital technologies optimally. These conditions reflect a persistent digital divide that requires greater attention in MSME development initiatives.

Research findings based on program implementation indicate that the effectiveness of the digital transition largely depends on external assistance and institutional support. Faturrahman (2025) found that limited digital knowledge and inadequate facilities constitute fundamental barriers at the regional level. Therefore, concrete measures, such as targeted education, technical assistance, and infrastructure provision, are required to strengthen the digital readiness of MSMEs. Furthermore, collaboration between the government and the private sector is essential for establishing a supportive digital environment (Rauf et al., 2024).

Collaboration among multiple stakeholders is essential for accelerating the digital transformation of MSMEs. Close cooperation among the government, the business sector, and digital communities can optimize digitalization programs through the provision of technological facilities, educational initiatives, and financial assistance (Meliawati et al., 2025). This collaborative approach also contributes to the creation of a more inclusive digital ecosystem, ensuring that MSMEs from different groups and regions can benefit from digitalization.

Digital transformation significantly contributes to strengthening regional economies and reducing regional disparities. Fransisca (2025) demonstrate that digitalization makes a substantial contribution to MSME performance, with e-commerce emerging as one of the dominant factors. Ensuring the equitable distribution of digital benefits requires regionally oriented policies that promote digital skills and collaboration among multiple stakeholders. This systematic approach has considerable potential to strengthen the contribution of MSMEs to economic development that is not only rapid but also equitable, inclusive, and sustainable over the long term.

CONCLUSION

A systematic literature review of 18 sources confirms that e-commerce technologies, digital marketing, and cloud-based systems are the primary drivers of MSME performance. The adoption of these technologies facilitates market expansion and the optimization of internal processes, positively affecting productivity and business profitability. Broader impacts include strengthening local and regional economies through increased economic activity, job creation, and the integration of MSMEs into digital and creative economy ecosystems. However, digital transformation remains constrained by several barriers, including inadequate digital infrastructure, limited technological knowledge, and difficulties in accessing financing. In addition, internal organizational factors, such as organizational readiness and the alignment of digital initiatives with business strategies, determine the success or failure of technology adoption in the MSME sector.

These findings have specific policy and theoretical implications. First, the Indonesian government should prioritize targeted digital literacy programs specifically designed for rural MSMEs in the trade and agribusiness sectors, where infrastructure gaps are most pronounced. Second, the observed inconsistency between digitalization and innovation outcomes among research-and-development-active firms suggests the need for differentiated digital strategies based on MSME typologies rather than one-size-fits-all policy frameworks. Third, collaborative ecosystem models that integrate government agencies, private-sector technology providers, and academic institutions demonstrate stronger technology-adoption outcomes than unilateral government programs. Future research should employ longitudinal empirical designs to track MSME performance before and after digitalization across specific sectors, such as culinary businesses, fashion, and handicrafts, thereby addressing the critical evidence gap identified in this review. Mixed-methods approaches that combine quantitative performance indicators with

qualitative organizational analysis are particularly recommended to capture the contextual complexity of digital transformation among Indonesian MSMEs.

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AUTHOR CONTRIBUTION STATEMENT

Heppi Syofya conceptualized the study, designed the research framework, supervised the overall research process, and finalized the manuscript. Prama Widayat contributed to the development of the theoretical framework, literature screening, and manuscript review. Deki Irawan was responsible for data collection, literature selection, and thematic synthesis. Suherman contributed to data analysis, interpretation of findings, and discussion development. Deby Anggun Sari assisted in manuscript preparation, reference management, language editing, and formatting. All authors read, and approved the final version of the manuscript.

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