

Systematic Literature Review and Bibliometric Analysis on MSMEs Digitalization Strategies in Indonesia

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Abstract

Research on the digitalization of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia remains dominated by empirical studies, while systematic reviews that map the evolution, structure, and thematic trends of this topic are still limited. Addressing this research gap, this study aims to systematically examine MSME digitalization strategies in Indonesia using a Systematic Literature Review (SLR) combined with bibliometric analysis. The SLR method was applied to articles indexed in the Scopus database for the 2019-2023 period, retrieved through Publish or Perish, and screened based on relevance to the research topic. The bibliometric analysis using VOSviewer was employed to map research trends, identify keyword relationships, and cluster thematic networks within the literature. From an initial pool of 1,000 articles, 80 studies met the inclusion criteria and were analyzed further. The bibliometric visualization identified seven main clusters and three dominant themes, namely digital transformation, MSMEs, and sustainable development. The four most prominent clusters highlighted e-commerce based digitalization strategies, social media utilization for marketing, cloud technology adoption, and digital divide and cybersecurity issues. The findings show that digitalization strategies in Indonesian MSMEs are largely driven by efforts to enhance competitiveness, market expansion, and operational efficiency. Moreover, e-commerce and social media platforms are identified as the dominant drivers of MSME digital transformation. Despite ongoing challenges such as limited technological access and low digital literacy, digitalization continues to yield positive impacts on business performance and sustainability. This study contributes to a clearer understanding of MSME digitalization in Indonesia and provides a comprehensive knowledge base for policymakers and researchers to develop effective digital transformation frameworks.

Keywords: Systematic Literature Review; Bibliometric Analysis; Digitalization; MSMEs; Strategy

Abstrak

Penelitian mengenai digitalisasi Usaha Mikro, Kecil, dan Menengah (UMKM) di Indonesia masih didominasi oleh studi empiris, sementara telah sistematis yang memetakan perkembangan, struktur, dan tren tematik topik ini masih terbatas. Menanggapi kesenjangan penelitian tersebut, studi ini bertujuan untuk mengkaji secara sistematis strategi digitalisasi UMKM di Indonesia dengan menggunakan metode Systematic Literature Review (SLR) yang dikombinasikan dengan analisis bibliometrik. Metode SLR diterapkan pada artikel yang terindeks dalam basis data Scopus untuk periode 2019–2023, yang diambil melalui Publish or Perish dan diseleksi berdasarkan relevansinya terhadap topik penelitian. Analisis bibliometrik menggunakan VOSviewer

dilakukan untuk memetakan tren penelitian, mengidentifikasi keterkaitan kata kunci, serta mengelompokkan jaringan tematik dalam literatur. Dari total 1.000 artikel awal, 80 artikel memenuhi kriteria inklusi dan dianalisis lebih lanjut. Hasil visualisasi bibliometrik mengidentifikasi tujuh klaster utama dan tiga tema dominan, yaitu digital transformation, UMKM, dan sustainable development. Empat klaster paling menonjol mencakup strategi digitalisasi berbasis e-commerce, pemanfaatan media sosial untuk pemasaran, adopsi teknologi berbasis cloud, serta tantangan kesenjangan digital dan keamanan siber. Temuan menunjukkan bahwa strategi digitalisasi UMKM di Indonesia terutama didorong oleh upaya peningkatan daya saing, perluasan pasar, dan efisiensi operasional. Selain itu, e-commerce dan media sosial diidentifikasi sebagai pendorong utama transformasi digital UMKM. Meskipun masih terdapat hambatan seperti keterbatasan akses teknologi dan rendahnya literasi digital, digitalisasi terbukti memberikan dampak positif terhadap kinerja dan keberlanjutan usaha. Studi ini memberikan pemahaman komprehensif mengenai lanskap penelitian digitalisasi UMKM di Indonesia serta menjadi dasar pengetahuan bagi perumusan kebijakan dan penelitian lanjutan mengenai transformasi digital UMKM.

Kata Kunci: *Systematic Literature Review; Analisis Bibliometrik; Digitalisasi; UMKM; Strategi*

Introduction

Digital inequality and limited technological literacy remain major challenges in the digital transformation of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Although digitalization is widely recognized as a crucial strategy to enhance national competitiveness, its adoption across regions and business sectors remains uneven. World Bank in 2023, this digital divide prevents many MSMEs, particularly those in rural or non-urban areas, from fully leveraging digital technologies to improve operational efficiency, expand market reach, and strengthen their global competitiveness. MSME digitalization refers to the process of transforming business operations through the use of digital technologies in management, production, and marketing activities.

The Indonesian government has made various efforts to accelerate this transformation through initiatives such as the National Movement of Proudly Made in Indonesia (Gerakan Nasional Bangga Buatan Indonesia) and the 1000 Digital Start-ups program. However, significant challenges persist. According to the Ministry of Communication and Informatics in 2022, only around 17.5 million out of 64.2 million MSMEs have integrated into the digital ecosystem. Although this represents an increase from 13.5 million in 2021, according to the Ministry of Cooperatives, it indicates that only about 27% of MSMEs are effectively utilizing digital platforms for their business activities.

The role of MSMEs is highly strategic in Indonesia's national economy. Data from the Ministry of Cooperatives and MSMEs in the year of 2023 shows that MSMEs contribute approximately 61% to the national GDP and absorb 97% of total employment, or around 123 million workers. With such a substantial contribution, MSME digital transformation becomes essential for economic resilience in the era of globalization and the Fourth Industrial Revolution. The Organisation for Economic Co-operation and Development (OECD) in 2023 stated that digitalization has been proven to enhance efficiency, improve market access, and create innovation opportunities for small businesses. Several studies have confirmed the strategic benefits of digital technology adoption for MSMEs.

Chirumalla (2021) emphasizes that digitalization fosters productivity and value-chain efficiency, while Octavina and Rita (2021) found that the integration of financial technology (fintech) and e-commerce platforms significantly improves MSME financial performance. A more recent report by Google and Temasek in the year of 2023 revealed that digitally active MSMEs in Southeast Asia have 1.8 times higher revenue growth potential than non-digital counterparts. Nevertheless, digital transformation remains constrained by multiple barriers, including limited digital literacy, inadequate technological infrastructure in remote regions, and a lack of financial and training support (McKinsey, 2024).

Holl and Mariotti (2021) also highlight the importance of adopting digital logistics innovation to accelerate supply chains and improve distribution efficiency. Without a supportive digital ecosystem, the immense potential of Indonesian MSMEs in the digital economy will remain underutilized. Therefore, multi-stakeholder collaboration among the government, private sector, and educational institutions is essential to enhance MSME digital capability through training, mentoring, and financial inclusion programs. Given these circumstances, there remains a research gap in understanding how digitalization strategies are implemented, evolved, and studied within the context of Indonesian MSMEs. Hence, this study aims to map trends, dominant themes, and scholarly contributions related to MSME digitalization strategies in Indonesia through a Systematic Literature Review and Bibliometric Analysis approach.

Method

This study used a Systematic Literature Review (SLR) method combined with bibliometric analysis and a descriptive qualitative approach. The data were obtained from scientific articles indexed in the Scopus database with the main focus on digitalization strategies for MSMEs in Indonesia. The research procedure began with determining search keywords, namely “digitalization strategy for MSMEs,” “digitalization,” “strategy,” and “MSMEs,” followed by searching the database in May 2024 for publications from 2019 to 2024. The initial search produced approximately 1,000 articles, which were then filtered based on inclusion and exclusion criteria related to the relevance of titles, abstracts, and keywords, resulting in 80 articles for further analysis. Metadata from selected articles, including author names, affiliations, abstracts, keywords, and references, were organized in CSV format for systematic processing. Data were refined and grouped based on themes, years, and journal information to ensure relevance and accuracy. Bibliometric analysis was then performed using VOSviewer software to visualize relationships between topics, research trends, and thematic clusters. The collected information was coded, categorized, and mapped thematically to identify patterns and connections among studies. The results of the analysis were interpreted comprehensively to synthesize findings that describe MSME digitalization strategies and the influencing factors within the Indonesian context.

Results

Based on the data retrieved using the Publish or Perish application, a total of 1,000 articles were identified; however, after filtering, 80 articles were found to be relevant for further analysis related to the studied variables. The publication trend on the topic “digitalization strategy for MSMEs” or related keywords such as “digitalization,” “strategy,” and “MSMEs” within the Scopus database from 2019 to 2023 shows a significant fluctuation in research output. As presented in Table 1 and Figure 1, the number of publications reached its peak in 2021 with 29 articles (36.3% of the total), followed by a decline in 2022 and 2023, each with 14 publications. This peak in 2021

may be associated with the heightened academic interest in digital transformation and business resilience strategies during the post-COVID-19 recovery period, when MSMEs worldwide sought digital solutions to sustain operations amid global restrictions (Nguyen et al., 2023).

Table 1. Percentage of Number of Publications

Year of Publication	Number of Articles	Percentage
2019	7	8,7%
2020	16	20,0%
2021	29	36,3%
2022	14	17,5%
2023	14	17,5%
Total	80	100%

Source: Data Processing Results, 2025

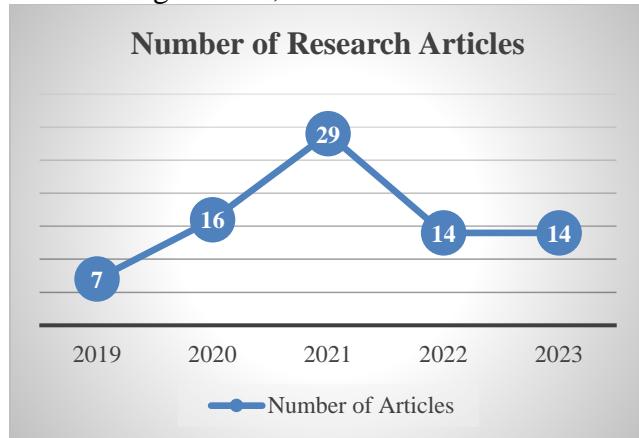


Figure 1. Graph of Number of Articles 2019-2023
(Source: Data Processing Results, 2025)

Furthermore, the top 10 most-cited publications listed in Table 2 indicate that the leading research contributions predominantly originate from China and European contexts, such as Luo et al., (2022) and Wen et al., (2022) highlighting the relationship between digitalization, sustainability, and corporate innovation. However, studies specifically focusing on MSME digitalization strategies in Indonesia remain limited, suggesting a gap in the global research landscape that warrants further exploration. This finding aligns with recent discussions emphasizing the need for localized studies on how digital transformation can enhance MSME competitiveness in developing economies (Prasetyo and Sutanto, 2023).

The visualization of network, density, and overlay maps (Figures 2, 3 & 4) further illustrates the thematic clusters surrounding “sustainable development” and “digital transformation,” which are conceptually linked to MSME strategy development. These clusters demonstrate how digitalization research has evolved toward integrating sustainability perspectives into business strategy frameworks, a trend that could inform future MSME digitalization policies in Indonesia.

Table 2. Percentage of Number of Publications

No	Cites	Author	Title	Year	Publication
1	214	Shiyue Luo, Nafisa Yimamu, Yueran Li, Haitao Wu, Muhammad Irfan, Yu Hao	Digitalization and sustainable development: How could digital economy development improve green innovation in China?	2022	Business Strategy and the Environment

2	206	Huwei Wen, Qiming Zhong, Chien-Chiang Lee	Digitalization, competition strategy, and corporate innovation: Evidence from Chinese manufacturing listed companies	2022	International Review of Financial Analysis
3	129	Erkko Autio, Ram Mudambi, Youngjin Yoo	Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces	2021	Global Strategy Journal
4	56	Beatrice Garske, Antonia Bau, Felix Ekardt	Digitalization and AI in European Agriculture: A Strategy for Achieving Climate and Biodiversity Targets?	2021	Sustainability
5	48	Francisco Javier Forcadell, Elisa Aracil, Fernando Ubeda	Using reputation for corporate sustainability to tackle banks' digitalization challenges	2020	Business Strategy and the Environment
6	35	Chiara Acciarini, Fernando Borelli, Francesca Capo, Francesco Cappa, Chiara Sarrocco	Can digitalization favour the emergence of innovative and sustainable business models? A qualitative exploration in the automotive sector	2021	Journal of Strategy and Management
7	35	Ilse Hellemans, Amanda J. Porter, Damla Diriker	Harnessing digitalization for sustainable development: Understanding how interactions on sustainability-oriented digital platforms manage tensions and paradoxes	2021	Business Strategy and the Environment
8	32	Lyna Latifah, Doddy Setiawan, Y. Anni Aryani, Rahmawati Rahmawati	Business strategy-MSMEs' performance relationship: innovation and accounting information system as mediators	2020	Journal of Small Business and Enterprise Development
9	30	Ariane Sept	Thinking Together Digitalization and Social Innovation in Rural Areas: An Exploration of Rural Digitalization Projects in Germany	2020	European Countryside
10	28	Abu Amar Fauzi, Margaret L. Sheng	The digitalization of micro, small, and medium-sized enterprises (MSMEs): An institutional theory perspective	2020	Journal of Small Business Management

Table 2 shows that the top 10 cited articles ranked first are Luo et al., (2022) the article has been cited 214 times. This research administers the principal component analysis (PCA) to evaluate the advancement level of the urban digital economy and

employs the number of urban green patent applications to represent the green innovation level. Through the benchmark regression model, the mediating effect model, the spatial Durbin model, the dynamic threshold panel model, and the gradual difference-in-difference model, this paper explores the direct effect, indirect effect, spatial effect, nonlinear relationship, and policy effect that the digital economy has on green innovation. Furthermore, the second most cited article is an article written by Wen et al., (2022) the article has been cited 206 times. This study examines the nexus between the digitalization of the manufacturing industry and corporate innovation investment.

Empirical evidence indicates that manufacturing enterprises have significantly increased their investment in innovation activities in the process of digital transformation, and this conclusion is still valid after employing a series of robust analyses to overcome endogeneity. Digital transformation also has an indirect effect on manufacturing enterprises' market competition strategy. Next, the third most cited article is an article written by Erkko et al., (2021) 129 articles have been cited that discuss digitalization has three fundamental characteristics: reprogrammability, infrastructure elementality, and intangibility. Based on these characteristics, it is transforming how firms organize for value creation, delivery, and capture.

Its intangibility and infrastructure character largely free economic and business activities from the constraints of physical geography, such as those imposed by transportation and collocation. Impact factor is a metric that measures how often articles in a journal are cited in other scientific literature within a certain period, usually the last five years. This is an important measure for evaluating the importance and reputation of a journal, by calculating the average number of citations to recent articles in that journal divided by the number of articles published in that journal. Impact factor can also be interpreted as a comparison between the number of articles cited to the number of articles published by a journal in a certain period. In general, a high impact factor indicates wider recognition from the academic world for the existence and quality of the scientific journal.

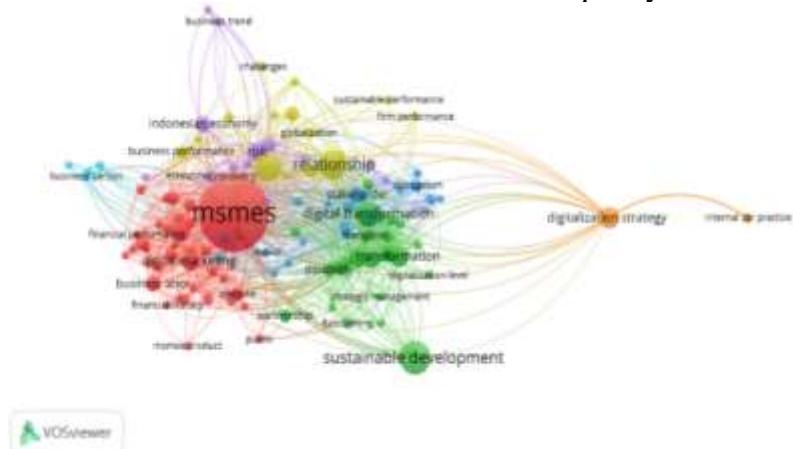


Figure 2. Network Visualization
(Source: Data Processing Results, 2025)

The data presented in Figure 2 illustrates the trends of dominant keywords in research related to the digitalization of MSMEs in Indonesia. Through bibliometric analysis using VOSviewer, it is evident that frequently appearing keywords highlight the research focus on themes such as MSMEs, digital transformation, digital marketing, sustainable development, and digitalization strategy. The size of each circle in the visualization represents the frequency of a keyword's occurrence in the literature, while the connecting lines indicate the strength of the relationships between research topics. The mapping results identified seven main clusters, represented by eight different colors, each reflecting a specific research theme.

In detail, the clusters are as follows: Cluster 1 (red) includes 36 keywords focusing on MSMEs, digital marketing, and financial performance. Cluster 2 (green) consists of 25 keywords centered around sustainable development and strategic management. Cluster 3 (dark blue) contains 20 keywords related to digital transformation and firm performance. Cluster 4 (yellow) includes 15 keywords emphasizing risk, stakeholder, and globalization aspects. Cluster 5 (purple) comprises 14 keywords highlighting business trends and challenges within the Indonesian economic context.

Cluster 6 (light blue) includes 4 keywords focusing on business actors and financial literacy. Cluster 7 (orange) consists of 3 keywords, namely digitalization strategy, internal, and practice, indicating research directions related to the implementation of digitalization strategies. This visualization reveals a strong interconnection among the topics of digital transformation, MSMEs, and sustainable development, which emerge as the three dominant themes in the literature on MSME digitalization in Indonesia.

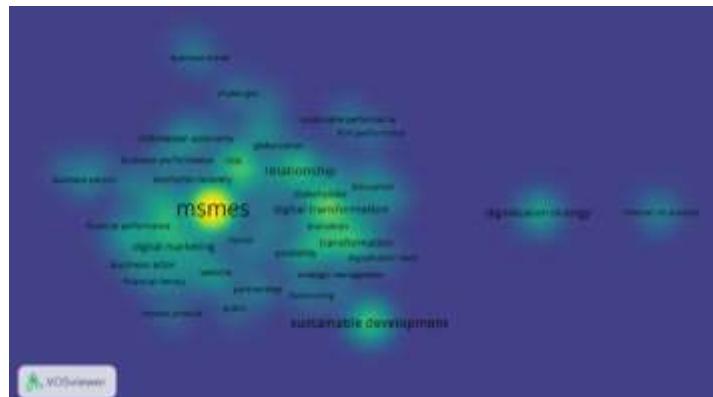


Figure 3. Density Visualization
(Source: Data Processing Results, 2025)

Figure 3 explains the description of the main weight of the research. Using a blue-to-yellow color scale can give an idea of how often a topic is discussed in the literature. The blue color indicates a low research weight because the topic is less discussed, while the yellow color indicates a high research weight because the topic is often discussed. Thus, the darker the color, the more important the topic is in literature. Based on analysis using VOSviewer on keywords that are often used in journals with the theme Digitalization Strategy for MSMEs in Indonesia, there are many clusters and connections between these keywords and others. The same color of keywords indicates a close relationship between them. The keywords most frequently used by authors in the literature are "MSMEs", "digital transformation", "transformation", "transition", "sustainable development", and "digitalization strategy". This shows that these topics have significant weight in relevant research.

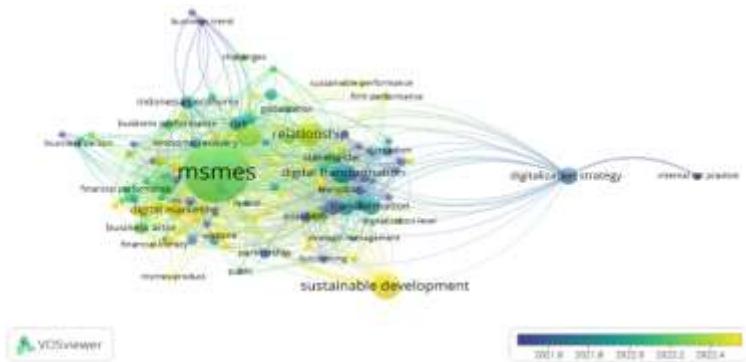


Figure 4. Overlay Visualization
(Source: Data Processing Results, 2025)

Figure 4 explains the research time trend in the 2019-2023 period. Based on the results obtained, the lighter the color, the newer the index used. In the word index paper with the theme Digitalization Strategy for MSMEs in Indonesia, several words are most widely used, namely sustainable development, digital marketing, website, and performance relationship. The digitalization trend involving the adoption of technology such as e-commerce, social media, and cloud-based applications has become a major focus for MSMEs in Indonesia in recent years.

E-commerce, for example, has opened up new opportunities for MSMEs to expand their market reach. With platforms such as Tokopedia, Shopee, and Bukalapak, MSMEs can sell products online to customers throughout Indonesia and even to international markets. This not only increases sales but also reduces operational costs because there is no need to open physical stores in various locations. Social media also plays an important role in MSME digitalization strategies. Platforms such as Instagram, Facebook, and TikTok are used to build brand awareness and promote products effectively.

Social media allows MSMEs to engage directly with customers, get feedback, and develop loyal communities. Through the paid advertising feature, MSMEs can target specific audiences based on demographics, interests, and behavior, so that marketing campaigns become more effective and efficient. In addition, cloud-based applications have helped MSMEs improve operational efficiency. By using software such as cloud-based inventory management, accounting, and project management, MSMEs can automate many business processes, reduce manual errors, and increase productivity. The app also enables better collaboration among teams, especially when team members are working from different locations.

The scalability offered by cloud-based solutions allows MSMEs to adapt to technology needs as the business grows. Overall, the adoption of digital technology has had a significant positive impact on MSMEs in Indonesia. Despite challenges such as the digital divide and cybersecurity, many MSMEs have managed to overcome these obstacles and take advantage of the opportunities offered by digitalization. With the right support from the government and private sector, the potential for digitalization to increase the competitiveness and sustainability of MSMEs is enormous. This trend is expected to continue and provide an important contribution to national economic growth.

Conclusion

Systematic literature study (SLR) and bibliometric analysis show that digitalization is an important strategy to increase the competitiveness of MSMEs in Indonesia. This research reveals that the adoption of digital technology can help MSMEs in various aspects, such as operational efficiency, improving product and service quality, and market expansion. By utilizing digital platforms, MSMEs can more easily reach new consumers, both at the national and international level, and reduce operational costs through automation and optimization of business processes. Even though digitalization offers many benefits, MSMEs in Indonesia also face various challenges in the adoption process. These challenges include limited technological infrastructure, a lack of digital literacy among MSME players, as well as financial obstacles to investment in new technology. Additionally, resistance to change and difficulty in integrating digital technology into daily operations are also significant barriers. However, the opportunities offered by digitalization far outweigh the challenges. With the right support from governments, financial institutions, and technology providers, MSMEs can leverage digital technology to achieve sustainable growth. This support can take the form of training and education on digital literacy, financial incentives for technology investment,

and development of adequate infrastructure. In this way, MSMEs in Indonesia will be better prepared to compete in the digital era and can contribute more to the national economy.

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