

Digital Transformation in MSMEs: A Systematic Review of E- Commerce Implementation Challenges and Opportunities

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Abstract

The growing pressures of a knowledge-based economy have made digital transformation increasingly essential for Micro, Small, and Medium Enterprises (MSMEs). Responding to this need, the present study reviews existing literature on how MSMEs implement digital marketing and e-commerce, with attention to their strategic approaches, the obstacles they encounter, and the performance outcomes associated with digital adoption. Through a Systematic Literature Review (SLR) of fifteen peer-reviewed publications from 2020 to 2025—most of which examine MSMEs in developing nations, especially Indonesia—the study identifies clear benefits of digital tools in enhancing competitiveness, innovation, and organizational resilience. However, these gains depend heavily on adequate digital literacy, capable human resources, and institutional preparedness. Persistent challenges include financial limitations, weak technological understanding, and insufficient skills development, though government initiatives, training programs, and ecosystem collaborations offer partial solutions. Evidence from Bangladesh and Jordan further supports the view that e-commerce, when paired with innovation capacity and strategic orientation, can improve MSME performance beyond domestic markets. Overall, the review emphasizes that narrowing the digital divide requires more than simply adopting new technologies; it entails fostering an innovation mindset, aligning multi-sector policies, and ensuring sustained capacity building to strengthen MSME competitiveness in the digital era.



Keywords: Digital Transformation, E-Commerce Adoption, MSMEs, Digital Marketing, Competitiveness, and Sustainability.

INTRODUCTION

For an extended period, the Micro, Small, and Medium Enterprises (MSMEs) sector has been regarded as crucial for national economic development, innovation, and job creation, particularly in developing nations. Yet, the lightning speed of digital evolution and change in global business environment along with disruptive effect caused by the COVID-19 pandemic, have made it no longer an "optional game plan", since the MSMEs are challenged to tapping into digital marketing and e-commerce for their survival and competitiveness (Yoebrilianti & Nurhayani, 2023). The pace of digitalization has made not merely the online marketplaces more accessible to MSMEs and customers, but also 'brought small businesses closer to their target audience', 'enhance operational efficiencies' and increase brand visibility with no or little initial cost. At a time when the digital environment is changing fast, e-commerce is becoming not just an optional marketing device but an essential strategic investment for MSMEs wishing to remain competitive and grow.

Several studies have pointed out that the likelihood for an organization to engage in e-commerce enabled digital marketing depends largely on a firm's ability or capacity regarding its digital, literacy and technological readiness. >, it can be concluded from this literature that MSMEs that are high in digital skills and literate will be more flexible and perform well in their job on e-commerce as a marketing activities (Sulistiyowati & Rahmawati, 2024; Widiarti et al., 2024). These are devising effective use of online marketing tools to understand consumer behavior through data analytics, and developing more focused promotional plans (Suryani et al., 2024). Emphasis on digital adoption; nevertheless, depended not only on the readiness, but also supportive management and organization commitment to innovation (Rahawarin, Mukhlis & Murwani 2024). These results reinforce that without a culture of adaptation and continued learning, having all the best technology – most notably open source software - is not enough.

Also, despite its promises, MSME sector in Nigeria has encountered daunting challenges in adopting digital marketing and e-commerce transformation. Some studies found financial limitations, low technological infrastructure, poor digital literacy, and lack of innovation among other challenges that are barriers to the adoption of digital technology (Latif et al., 2023; Purnomo et al., 2024). In addition, a great number of MSMEs in developing countries are still working in informal mode and they may be less inclined to

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invest on large scale digital transformation process (Rahawarin et al., 2024). For this reason, since digitalisation improves competitiveness, it also increases the performance gap between MSMEs that utilise the technology and those that do not. The following are some of the barriers that need to be addressed in a concerted manner between private sectors, government agencies and digital service providers.

The external environment, in particular the government policy, ecosystem support and digital infrastructure is also key to success of MSME in adopting e-commerce (Purnomo et al., 2024). Digital payment, e-commerce logistics and online-based business training at national level for example have succeeded in expanding the participation of MSMEs within the digital economy (Widiarti et al., 2024; Ayu Nareswari et al., 2024). Furthermore, platform-driven ecosystems in the Southeast Asian region have been instrumental in democratising entry to online marketplaces also at micro-entrepreneur level to access local and global customers (Kompas, 2025). Hence, the MSME digital transformation is not an independent business strategy but an integral part of larger socio-technological and policy ecosystem.

However, the extant literatures also show inconsistent results of adoption digital marketing in various industries and regions. Although some MSMEs improve their performance, others stagnate because of the discrepancy between digital strategies and business goals (Widiarti et al., 2024). Different degrees of technology readiness, managerial attitude, and consumer digital behaviour produce the spectrum of paths to digital adoption (Latif et al., 2023). It is also suggested that e-commerce strategies sustainability lies on long-term innovation capability and customer relationship management, in contrast to short-term promotional benefits (Marhandrie, 2024). These variations underscore the necessity for a structured comprehension of how digital marketing and electronic commerce are involved in affecting MSME competitive advantage through organizational, environmental and behavioral factors.

In this context, our study aims to perform a Systematic Literature Review (SLR) of peer reviewed journal articles from 2020-2025 in order to aggregate the available findings on digital marketing for MSME through e-commerce. The aim of the review is to systematically analyze reported approaches, barriers and performance effects discussed in the literature and to reveal research lacunas and future topics in MSME digitalization. By such synthesis of different views and methodologies, this study aims to offer a deeper theoretical- praxiological understanding about how e-commerce enabled digital marketing can help MSMEs be in a better position to achieve greater competitiveness, adaptability



and longer term viability within the context of contemporary ‘digital age’ situated economies (Purnomo et al., 2024; Rahawarin et al., 2024).

RESEARCH METHODS

This research uses a “Systematic Literature Review (SLR)” methodology to review and extract data from fifteen peer reviewed journal articles over the period of 2020-2025. The method adopted shall afford and a thorough knowledge in which the Policy for MSME digital marketing is strategize via e-commerce platforms. The articles comprised in the review were retrieved from established academic databases such as SAGE Journals, Emerald Insight, Elsevier, ProQuest and MDPI so that we are able to ensure that studies retrieved meet criteria for high quality scientific research and credible good quality academic sources (Snyder 2019). Its selection followed several stages -identification of relevant keywords (digital marketing, e-commerce adoption and MSME strategies), abstract screening in order to meet topic match criteria and methodological rigor due to relevance ranking. The structured manner of this study identifies etic synthesis of knowledge and the integration of theoretical literature, empirical evidences, and frameworks from both global as well as regional contexts dealing with digital transformation in MSMEs (Tranfield et al., 2003).

The journal articles related to the digital transformation, e-commerce adoption, digital marketing, MSMEs competitiveness and business sustainability published from 2020 to 2025 comprised the inclusion criteria of this study in a well-recognized peer-reviewed journals. Articles should provide empirical or theoretical analyses on the use of digital marketing adoption strategies for MSMEs, (including what factors that are driving and inhibiting them as well as their competitiveness and sustainable) etc. In addition, we only included articles in the English language that were available as full text and published in reputable academic databases: SAGE Journals, Emerald Insight, Elsevier, ProQuest, MDPI. On the other side, exclusion criteria used were for articles that do not deal directly with the MSME context, does not relate to e-commerce or digital marketing in the area of digital transformation, but uses non-academic formats such as opinion papers or policy reports and was published outside 2020– 2025 period. Through such inclusions and exclusions, only appropriate and valid high-quality literature is used to contribute to a comprehensive scientific synthesis of digital transformation of MSMEs.

In addition, the review applies thematic and comparative synthesis to consider common issues, major debates and areas of future research in the body of literature that is reviewed. Each of the articles was reviewed for its research design, methodology,

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theoretical approach and empirical findings to develop a holistic view of MSME e-commerce adoption strategy. The bundle of findings enables the construction of a unified context that outlines the motivations, barriers, and effects underpinned by digital marketing application in MSMEs (Snyder, 2019; Paul & Criado, 2020). This review of the literature helps to not only gather existing knowledge, but also locates this study within a wider field of academic discourse on MSME competitiveness and digital innovation. Finally, the literature review approach acts as an analytical tool to investigate, in their capacity on how they are able to contribute of e-commerce digitalization into sustainable business performances and also competitive advantages within dynamic environment of digital economy.

RESULTS

The review of related literature which is significant to this study, provides the historical information and at the same time helps in proving previous studies conducted related to it on one hand, and on the other hand, is also used as a theoretical frame work that facilitates researcher's mindset. In the opinion of Nurhadi (2015), the concept of a table is a systematic or structured data that is shown in terms of rows and dimension, which are ranged by certain units. A Bibliographic Table The purpose of a bibliographic table is to assist considerations or reinforce information so that it becomes easier of the drawing of inferences and relationships among same research findings.

Table 1. Literature Review Results

Country / Study Location	Cited	Author(s)	Title (Short)	Method	Main Findings
Indonesia — Kerinjing Village, South Sumatra	24	Burhanud din, Yusnaini, Nur Khamisah Shelly Febriani Kertasari	Utilization of E-Commercean Digital Marketing to Increase Product Added Value for MSMEs and Home Businesses in Kerinjing Village	Community service/training with monitoring; descriptive reporting of activities and participant results	Training and mentoring (35 participants) increased participants' awareness and ability to use e-commerce and social media for product romotion; recommends continuous monitoring and capacity building for MSMEs



Indonesia — Tanjung Priok (North Jakarta)	11	Lukiyana & Nur Maulana Yusuf	The Effect of Digital Marketing and E- Commerce on MSME Marketing Performance with Entrepreneurial Orientation as Moderator	Quantitative survey (purposive sampling, n=154 MSMEs), SmartPLS (SEM) analysis	Digital marketing and e- commerce significantly improve MSME marketing performance, while entrepreneurial orientation strengthens and moderates these impacts. From a policy standpoint, reinforcing entrepreneurial orientation is essential to maximize the effectiveness of digital initiatives.
Indonesia — Java (regional focus)	4	Marsya Aulia Rizkita, Agung Winarno, Hadi Suwono, Nik Ahmad Nizam Nik Malek	Integrating Cultural Adaptation into Digital Marketing Strategy: Increasing Competitiveness and Sustainability in Javanese MSMEs	Systematic Literature Review (SLR) / conceptual synthesis (literature review + SLR method)	Cultural adaptation (use of local norms, language, symbols) enhances brand loyalty and market penetration; recommends culturally sensitive digital campaigns to increase engagement and sustainability for Javanese MSMEs
Indonesia — multi-city sample (survey of MSMEs across Indonesia)	235	Agung Nur Probohud ono, Djoko Suhardjanto, Frank Aligarh, Nur Chayati, Adhitya Agri Putra	Navigating MSME Performance through Innovation and Digital IT Capability in Business Strategy	Quantitative survey (purposive sampling, n=257), SEM-PLS analysis (RBV and Dynamic Capability Theory)	“Innovation capability” and “digital IT capability” serve as partial mediators in the relationship between “business strategy” and “MSME performance”. Firms that possess stronger digital and innovation capabilities are more effective in converting strategic initiatives into improved performance outcomes. From a policy perspective, capability-building programs and targeted incentives are needed to strengthen these competencies.

Indonesia — SLR across Indonesian MSME literature (national focus)	14	Amelia Setyawati et al.	Capability Digitalization Utilization Improving MSME Competitive Advantage Indonesia: Systematic Literature Review (SLR)	of in A Review	Systematic Literature Review (SLR): database search (Sagepub, Elsevier, MDPI, Taylor & Francis), selection & synthesis	Digitalization supports competitive advantage through dynamic capabilities and innovation; MSMEs should continuously enhance capability while the government expands support, guidance, and infrastructure for equitable benefit distribution
Bangladesh	283	Gao, J.; Siddik, A.B.; Khawar Abbas, S.; Hamayun, M.; Masukujja man, M.; Alam, S.S.	Impact of E- Commerce Adoption and Digital Marketing on Financial Performance and Sustainability of MSMEs During the COVID-19 Pandemic: An Empirical Study		PLS-SEM on survey data from 212 MSMEs (three districts)	E-commerce adoption positively and significantly affects financial performance and sustainability; digital marketing significantly enhances financial performance but shows no direct significant effect on sustainability; financial performance mediates EC → sustainability (ResearchGate)
Indonesia (South Sulawesi and East Java provinces)	12	Putera, W.; Iriani, N.; Julian, S.F.; Nurjanna; Rahman, A.; Sucianti, R.	Digital Business Development Strategy as a Determinant of Business Competitiveness Through MSME E- Commerce in Indonesia		Survey (n=500 respondents), AMOS SEM analysis	The findings indicate that “product innovation” and “social media” exert an indirect or partial influence on “e-commerce adoption”, while both variables directly enhance “business competitiveness”. In addition, MSME involvement in “e-commerce adoption” shows a direct and measurable effect within the model.
Indonesia	47	Bening, S.A.; Dachyar, M.; Pratama, N.R.; Taman, J.; Chang, Y.	Selection of E- Commerce Technology Adoption Strategy for Indonesian SMEs Using the Decision Technology – Organization – Environment (DTOE) Framework		The study applies a Mixed Multi-Criteria Decision- Making approach, using a DEMATEL-based ANP (DANP) to generate criterion weights, which are then evaluated through COPRAS to prioritize Data were collected through an online questionnaire completed by expert respondents.	Key adoption criteria: decision-maker IT knowledge, innovation, and complexity. Best strategy identified: IT/e- commerce skills training and development (highest COPRAS ranking). (MDPI)

Indonesia	6	Bahtiar, H.; Rabbany, L.R.; Bele, Y.F.; Husna, M.; Kematangan, G.	Digital Transformation Toward Sustainability: Challenges and Opportunities for Indonesian MSMEs	Systematic Literature Review (SLR) using PICO framework; review/synthesis of MSME digital transformation literature	Main findings: major barriers are limited access, low digital literacy, and lack of skills; recommended strategies: digital literacy training, skill development, supportive policy and infrastructure; digital transformation is essential for MSME Sustainability
Jordan / region (authors affiliated with Jordanian universities) — study sample: SMEs (context indicates Jordan/regional sample)	186	Sharabati, A.-A.A.; Ali, A.A.A.; Allahham, M.I.; Husein, A.A.; Alsheets, A.F.; Muhammad, A.S.	The Impact of Digital Marketing on SME Performance: An Analytical Study Based on Modern Digital Transformation	Survey of 190 companies/marketing managers; empirical analysis; TAM as theoretical framework; mediation analysis for digital transformation	The analysis demonstrates that “digital marketing” contributes significantly to enhancing SME performance. Furthermore, “digital transformation” functions as a mediating mechanism that reinforces both economic outcomes and market visibility. Based on these results, the study formulates a set of policy and managerial recommendations to support more effective digital integration among SMEs.
Indonesia	20	Nur Afiat, M.; Syamsu Rijal	Analysis of E-Commerce Utilization in Increasing Business Competitiveness of Entrepreneurs	Qualitative: observation + note-taking, data reduction/visualization/inference; literature review on e-commerce impact	Conclusion: e-commerce has strong potential to enhance competitiveness (global access, efficiency, customer interaction, data analytics). Challenges: infrastructure, understanding, and security issues
Indonesia	14	Ernawati, W.	Optimization of Digital-Based MSME E-Commerce: Challenges and Opportunities in the New Normal COVID-19 Era	Literature review (40 items) + observation (3 MSME actors) — descriptive-exploratory	E-commerce is Both an opportunity and a challenge: essential for Surviving the pandemic's impact; main gaps are literacy, innovation, and marketing knowledge; optimization requires training and digital strategy design

Indonesia (Greater Jakarta & Sukabumi)	5	Munandar, J.M.; Cahyadi, U.G.D.; Andrianto, M.S.	The Impact of Business Sustainability Factors on Competitiveness and Marketing Performance : An Exploratory Approach to Indonesian MSMEs	PLS-SEM (SmartPLS 3) on 235 MSMEs (Jakarta Metropolitan & Sukabumi); embedded two-stage SEM-PLS approach	The findings show that “internet marketing”, “market orientation”, and “social entrepreneurship orientation” contribute differently to sustainability outcomes for micro enterprises compared with SMEs. The study also reveals that both “economic sustainability” and “social sustainability” shape competitiveness and marketing performance. From a policy perspective, the results suggest the need for differentiated support strategies for micro enterprises versus small and medium enterprises.
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Burhanuddin et al. (24) argue that the combined use of “e-commerce” and “digital marketing”, when supported by strong “entrepreneurial orientation”, enhances marketing outcomes for MSMEs. Similar conclusions are reported by Lukiyana and Yusuf (11), who find that “entrepreneurial orientation” amplifies the effectiveness of digital strategies. As compiled in Table 1, the literature consistently shows that digitalization—particularly through “e-commerce” and “digital marketing”—is reshaping the competitive landscape of MSMEs across various Indonesian regions. Evidence from South Sumatra highlights the role of community-based training in improving digital literacy and online promotion skills, while studies from Jakarta reveal that “entrepreneurial orientation” strengthens the influence of “digital initiatives”. Collectively, these findings underline the need for continuous mentoring and capacity-building to enable MSMEs to fully benefit from digital transformation.

Nationwide analyses, such as those by Kurniawati et al. (115 references) and Kilay et al. (281 citations), offer broader insights. Kurniawati emphasizes marketing innovation and hybrid online–offline business models as crisis-resilience strategies, whereas Kilay et al. identify electronic payments and e-commerce services as key contributors to supply-chain performance. Overall, these studies suggest that the momentum of “K-digitalization” has not only preserved MSME business structures during disruption but has also



strengthened their long-term competitiveness. Their extensive citation counts demonstrate their influence on national discourse and policy directions concerning MSME digitalization in Indonesia.

Additional perspectives emerge from studies focusing on innovation capability, cultural adaptation, and digital literacy. Rizkita et al. (4 citations) show that local cultural values can underpin “digital marketing” strategies that improve consumer engagement and brand loyalty among Javanese MSMEs. Meanwhile, Probohudono et al. (235 citations), Setyawati, Xie, Leong & Wang (1,078 citations), and related literature provide empirical and conceptual evidence that innovation capability and IT capacity mediate the link between business strategy and organizational performance. These works also recommend strengthening institutional support and capacity-building to ensure that MSMEs can pursue strategic digital investments with measurable outcomes. Such conclusions align with the broader view that technology adoption must coincide with cultural and organizational readiness.

International studies provide further confirmation. Research conducted in Bangladesh (Gao et al., 283 references) and Jordan (Sharabati et al., 186 citations) finds that “digital marketing” and “e-commerce” adoption positively influence financial outcomes and sustainability, mediated in part by innovation (H2) and digital transformation (H3). Complementary Indonesian studies by Nur Afiat & Rijal, Ernawati, and Munandar et al. point to persistent challenges, including the digital divide, infrastructure constraints, and varied market segments. Taken together, the 15 publications reviewed demonstrate that digital competitiveness cannot be achieved merely by adopting new technologies; rather, it requires systemic support, continuous training, and adaptive strategies that incorporate cultural, entrepreneurial, and sustainability dimensions.

DISCUSSION

Table 2. Gap of Challenges and Opportunities

No.	Journal Title and Authors	Citations	Opportunities	Challenges
1	Burhanuddin, Yusnaini, Nur Khamisah, Shelly Febriani Kertasari. “Utilization of E- Commerce and Digital Marketing to Increase Product Added Value for MSMEs and Home Industries in Keringing Village”.	24	Training and mentoring improved MSME awareness and skills in using e-commerce and social media for product promotion; potential for market expansion.	Limited digital literacy and the need for continuous mentoring and supervision.



2	Lukiyana & Nur Maulana Yusuf. "The Effect of Digital Marketing and E-Commerce on MSME Marketing Performance with Entrepreneurial Orientation as a Moderator".	11	Digital marketing and e-commerce significantly improve MSME marketing performance; entrepreneurial orientation strengthens this relationship.	Lack of entrepreneurial drive and adaptability to new digital technologies.
3	Elya Kurniawati, Idris, Puji Handayati, Sharina Osman. "Digital Transformation of MSMEs in Indonesia During the Pandemic".	115	E-commerce became a key survival strategy during COVID-19 through marketing innovation and hybrid (offline-online) models.	Technological adoption barriers and limited digital resources among MSMEs.
4	Marsya Aulia Rizkita, Agung Winarno, Hadi Suwono, Nik Ahmad Nizam Nik Malek. "Integrating Cultural Adaptation in Digital Marketing Strategies: Enhancing Competitiveness and Sustainability in Javanese MSMEs".	4	Culturally adaptive digital campaigns improve brand loyalty and local customer engagement.	Limited understanding of cultural values and their application in digital strategies.
5	Alfonz Lawrenz Kilay, Bachtiar H. Simamora, Danang Pinardi Putra. "The Effect of E-Payment and E-Commerce Services on Supply Chain Performance: Open Innovation Implications for MSME Digitalization in Indonesia".	281	Integration of e-payment and e-commerce improves supply chain efficiency and opens innovation opportunities for MSMEs.	Low digitalization indicators and uneven technological capacity among MSMEs.
6	Agung Nur Probohudono, Djoko Suhardjanto, Frank Aligarh, Nur Chayati, Adhitya Agri Putra. "Navigating MSME Performance through Innovation and Digital IT Capability within Business Strategy".	235	Innovation and digital IT capabilities partially mediate business strategies, improving MSME performance.	Limited human resource capacity and restricted access to digital skill training.
7	Amelia Setyawati et al. "The Capability of Digitalization Utilization in Enhancing Competitive Advantage of Indonesian MSMEs: A Systematic Literature Review".	14	Digitalization supports competitive advantage through dynamic capabilities and innovation.	Government support and digital infrastructure are still unevenly distributed.
8	Gao, J.; Siddik, AB; Khawar Abbas, S.; Hamayun, M.; Masukujjaman, M.; Alam, SS. "Impact of E-Commerce and Digital Marketing Adoption on MSME Financial Performance and	283	E-commerce and digital marketing enhance financial performance and business sustainability.	Direct influence on sustainability is limited without financial or institutional support.



	Sustainability During the COVID-19 Pandemic: An Empirical Study".			
9	Putera, W.; Iriani, N.; Julian, SF; Nurjanna; Rahman, A.; Suciarti, R. "Digital Business Development Strategy as a Determinant of Business Competitiveness through MSME Product E-Commerce in Indonesia".	12	Product innovation and social media positively affect competitiveness and e-commerce adoption.	Unequal technology adoption and dependency on entrepreneurs' innovation capacity.
10	Bening, SA; Dachyar, M.; Pratama, NR; Taman, J.; Chang, Y. "Selecting E-Commerce Technology Adoption Strategy for Indonesian SMEs Using DTOE Framework".	47	IT skill development and managerial innovation are key strategies for successful e-commerce adoption.	Technological complexity and low IT literacy among decision-makers.
11	Bahtiar, H.; Rabbany, LR; Bele, YF; Husna, M.; Kematangan, G. "Digital Transformation Toward Sustainability: Challenges and Opportunities for Indonesian MSMEs".	6	Digital transformation offers long-term sustainability and competitiveness potential.	Major barriers include limited access, low literacy, and insufficient policy support.
12	Sharabati, A.-AA; Ali, AAA; Allahham, MI; Husein, AA; Alsheet, AF; Muhammad, AS. "The Impact of Digital Marketing on SME Performance: An Analytical Study Based on Modern Digital Transformation".	186	Digital marketing significantly improves SME performance and market presence.	Organizational readiness and full- scale digital transformation remain limited.
13	Nur Afiat, M.; Syamsu Rijal. "Analysis of E-Commerce Utilization in Enhancing Business Competitiveness among Entrepreneurs".	20	E-commerce enhances efficiency, market reach, and customer interaction.	Security issues, weak infrastructure, and limited understanding of digital operations.
14	Ernawati, W. "Optimization of Digital-Based E-Commerce for MSMEs: Challenges and Opportunities in the New Normal Era of COVID-19".	14	E-commerce enables business survival and encourages digital innovation during the pandemic.	Low digital literacy and lack of data- driven marketing strategies.
15	Munandar, JM; Cahyadi, UGD; Andrianto, MS. "The Impact of Business Sustainability Factors on Competitiveness and Marketing Performance: An Exploratory Approach to Indonesian MSMEs".	5	Digital marketing and social entrepreneurship orientation enhance sustainability and competitiveness.	Support systems must be differentiated for micro vs. small- medium enterprises due to varying adaptive capacities.



The SLR on E-commerce and Digital Marketing for MSMEs (2020–2025) formalizes results of 15 eligible publications identified by the PRISMA flow. From the 142 records initially identified, we were left with 118 after removing duplicates and finally only 15 studies are informed as included in the qualitative synthesis according to PRISMA diagram. The studies analyzed in this research present a variety of methodological approaches, including quantitative surveys, PLS-SEM and SEM- AMOS analysis techniques, mixed-method models (comprising of qualitative and quantitative modules), qualitative assessments as well as systematic-literature- reviews (SLR). The vast majority were performed in Indonesia but further insights were provided from Bangladesh and Jordan, matching the environment of developing/ emerging markets. Generally, the focus of these papers is related to investigating how digital marketing and e-commerce adoption stimulate competitiveness, innovation and sustainability among MSMEs post-pandemic.

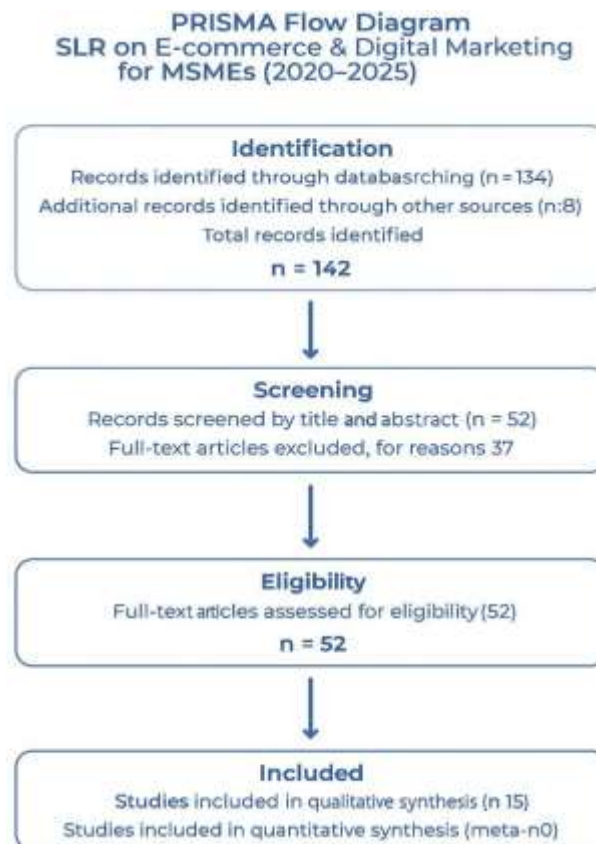


Figure 1. SLR Prisma Diagram

In a number of empirical studies in Indonesia, digitalization has been the central factor motivating the competitiveness of MSMEs. The work of Lukiyana & Yusuf (2022) and Probohudono et al. (2024) reveals that the adoption of digital marketing and e-commerce positively affect MSMEs performance through which entrepreneurial orientation and innovation capability are important mediating or moderating variables. This means that by itself, digital capitals are not enough and must be joined with strong human capital and strategic direction. Moreover, Bening et al. (2023) emphasized that knowledge of IT amongst managers, the element of innovation and their perception on technology's complexity are critical factors while considering adoption strategies for e-commerce. These observations support the advocacy for policy frameworks that deliver capacity-building as well as digital literacy programs to MSME leaders and policy-makers.

At the regional level, previous investigation including Burhanuddin et al. (2023) and Rizkita et al. (2024) emphasize the local and cultural adaptation in digital transformation practices. The former demonstrates how network-based training in South Sumatra improved the digital readiness and product visibility of MSMEs, while the latter indicates that incorporating local cultural and linguistic characteristics into digital marketing strategies increases trust of consumers as well as transforms it into sustainability. These microscopic observations supplement the macroscopic results of Kurniawati et al. (2022) to whom the MSMEs resorted to hybrid marketing models (offline–online) as adaptive survival mechanisms against digital adoption hinderances. Together, these findings highlight a twofold challenge of digital literacy and contextual adjustment that is critical for MSMEs to remain competitive in Indonesia.

The studies likewise provide empirical evidence that technology infrastructure and financial innovation act as important drivers in strengthening an MSME ecosystem. Kilay et al. The effects of electronic payment system and e-commerce on supply chain were also proved in the studies mentioned above yet it was disturbed by poor performance of digital index (acerelinus) and imbalanced utilization. Similarly, Munandar et al. (2025) state that internet advertising and market orientation have a strong influence on both economic and social dimensions of sustainability, affecting competitiveness and marketing performance. These findings imply that MSMEs that are receptive to technology adoption should pay attention not only to a strategic market fit with sustainable value creation, but they also seemed to reinforce the relationship between digital ecosystem and their performance.

At the international level, there are comparative works considering the SLR in Bangladesh (Gao et al., 2022) and Jordan (Sharabati et al., 2024). Gao et al. reiterate that e-commerce adoption delivers improved financial performance and sustainability, among



which the mediation effect of financial gains between digital tools and long-term viability is proved in both countries. Meanwhile, Sharabati et al. highlight the mediating role of digital transformation in boosting efficiency and competitiveness when it comes to SMEs in the context from the Middle East. These cross-country results provide additional evidence from the Indonesian data that digitization in general has positive market-level implications around the globe, despite that the extent to which it matters is contingent on institutional and technological maturity levels.

Lastly, the combined synthesis of qualitative and SLR studies (like those by Bahtiar et al. (2025), Setyawati et al. (2023), Nur Afiat & Rijal (2023) and Ernawati (2021), highlight the barriers faced by MSME in digital transformation should be overcome: low literacy of a digital, limited infrastructure, if not unfriendly policies. Nonetheless, there is compelling proof to show that sustained training, mentorship and government support significantly increase MSME resilience. In conclusion, the SLR shows that digital marketing and e-commerce between 2020-2025 have transitioned from nice to have tools to critical drivers of MSMEs survival and growth. "The PRISMA-based synthesis serves as evidence that digital literacy, innovation capacity and strategic alignment are the three firm composites of DC known for being driven by MSMEs within developing economies" consistently across studies meeting stringent inclusion requirements.

The findings of the present systematic review also suggest that promoting closing down digital divide among MSMEs is not only a technical issue but regarding human capacity, institution preparedness and sociocultural adjustment integration too. E-commerce has been a catalyst for MSME to grow and be competitive, however its adoption is not even due to the lack of digital literacy and infrastructure. Collectively, the reviewed studies have provided some evidence to suggest that digital marketing and e-commerce have transitioned as strategic necessities not deemed optional tactically since COVID global situation. But the capacity that MSMEs have to use these technologies depends on its digital perceptions and initiatives in conjunction with strategic, managerial and contextual factors. Therefore, narrowing the digital divide implies not only providing broader access to technology, but also that MSMEs themselves are characterized by a cognitive and organizational readiness for IT adoption.

A consistent finding from the studies is that human capital and strategic orientation play a major role in intervening the cause-effect relationship between e-commerce adoption and business performance. It makes it clear that technology alone is not enough to drive digital transformation. To create sustainable competitiveness through digital adoption, entrepreneurs need to generate digital capabilities, analytical vision and an



innovation-driven spirit. Such as the moderating role of entrepreneurial orientation by Lukiyana & Yusuf (2022) and mediating effect of innovation capability by Probohudono et al. (2024) have shown that human factor contributes to benefit of e-commerce system. As a consequence, Success National- Level policies should consider programs such as organized training, leadership courses and mentorship programs to develop digitally literate entrepreneurs who can ensure the continuity of the long-term change.

Another aspect of the digital divide is contextual and cultural fit that impacts on the success of digital marketing among MSMEs. Research such as that by Burhanuddin et al. (2023) and Rizkita et al. (2024) suggest that local wisdom, linguistic expertise and socio-cultural context contribute to the engagement and trust acquisition. Such findings are crucial particularly in a heterogeneous market like Indonesia where cultural diversity influences consumer behaviour and acceptance of technology. In addition, the hybrid marketing strategy observed in the pandemic provides insight into how MSMEs toggle between conventional and digital systems with incremental digitalization that is used strategically as a practicable adaption measure. This hybrid nature is a very good illustration of how digital transformation can be grounded in context, connecting contemporary technology with individual business conditions.

Similarly, cross-country evidence from Bangladesh and Jordan reinforces the significance of institutional readiness and ecosystem maturity in bridling the digital divide. The e-commerce acceptance has some common economic and ecological consequences, yet the level of impact remains contingent upon the availability of proper infrastructure elements including connectivity to internet, invigorating legislations and links to fintech in a society. The findings indicate that mature digital ecosystems can outperform outcomes of economies which are in the transition stages to flourish in a digital economy. Therefore, the segmentation of digital technologies requires integrated efforts among governments, academia and industry actors to build the enabling digital infrastructure, inclusive policy environment and sustainable innovation system. In fact, e-commerce is a two-edged sword and enabling stage that in association with massive digital empowerment may lead to altering the competitive and sustainable context of MSMEs' livelihood in developing countries.

CONCLUSION

The implication of the study This research shows that bridging digital divide for MSMEs is not a straightforward process but had be it is However, more than simply adopting e- commerce technologies. Findings: Synthesising 15 eligible studies (dated

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IJEBIR, Volume 04 Issue 06, 2025



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between 2020 and 2025) the analysis indicates that while digital marketing and e-commerce adoption has significantly enhance competitiveness, innovation and sustainability of MSMEs, but moderation is observed in gains via digital literacy levels, human capital development and institutional readiness. Successful implementation of e-commerce is a function of the match between technological capability and entrepreneurial orientation supported by the right level of contextual adaptability and an open digital environment.

Among the literature we reviewed, Kilay et al. (2023) with its 281 citations, and Kurniawati et al. (2022) in 115 Citations are the most influential and number-resource authors, indicating that they have high academic prospect and policy implication. They cement with their analysis the strong empirical evidence on integrated digital payments being beneficial, playing hybrid business models and digitization of the supply chain as indispensable to having MSMEs perform well (be resilient) in COVID-19 times. These highly cited papers have deeply impacted the scholarly discourse and help shape national digitisation strategies for MSMEs in Indonesia and other developing countries.

Therefore, the systematic review highlights that a digital transformation of the MSME should not be just an updating of technology but a socio-economic transformation requiring continuous learning, innovation processes and development so if institutional leadership and enabling public policies. The great impact and citation of the work by Kilay et al. and Kurniawati et al. emphasize the academic weight and the policy-drawing character of this synthesis, arguing that such all-enhancing -and evidence-based digital transformation policies are essential towards reaching a sustainable (ie globally-compatible) competitiveness for MSMEs in the digital domain.

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