



**International Journal of Education, Social Studies,
And Management (IJESSM)**

e-ISSN : 2775-4154

Volume 6, Issue 1, February 2026

The International Journal of Education, Social Studies, and Management (IJESSM) is published 3 times a year (**February, June, October**).

Focus : Education, Social, Economy, Management, and Culture.

LINK : <http://lppipublishing.com/index.php/ijessm>

The Impact of Digitalization and E-Commerce on the Development of MSMEs in Indonesia

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ABSTRACT

Ongoing digital transformation has reshaped the way Micro, Small, and Medium Enterprises (MSMEs) operate, requiring business actors to adjust their strategies in order to sustain competitiveness in a rapidly evolving market. This research explores how digitalization and e-commerce adoption contribute to the development of MSMEs in Indonesia, particularly in terms of business effectiveness, operational improvement, and market expansion. A qualitative research design was applied through a literature-based approach by examining and synthesizing findings from prior studies and academic sources. The analysis reveals that digital technology adoption supports MSME growth by expanding market opportunities, streamlining transaction processes, and enhancing marketing activities. However, several obstacles remain, including limited digital capabilities, uneven internet infrastructure, financial constraints related to technology investment, and concerns over data security. Accordingly, collaborative efforts involving government institutions, private sectors, and educational organizations are necessary to establish an inclusive digital environment that strengthens MSME competitiveness in the digital economy.

MSMEs, Digitalization, E-Commerce, Digital Transformation, Economic Empowerment

ARTICLE INFO

Article history:

Received

07 December 2025

Revised

01 January 2026

Accepted

20 January 2026

Keywords

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are a crucial backbone of the national economic structure. According to data from the Ministry of Cooperatives and SMEs, this sector accommodates approximately 97% of the workforce and contributes 61.97% to Indonesia's Gross Domestic Product (GDP) (Kemenkop UKM, 2024). Despite this, MSMEs still face various serious challenges, particularly in adapting to shifting consumption patterns, evolving consumer marketing approaches, and changing business models that are increasingly integrated with digital technology amidst the rapid pace of digital transformation. Within this national context, the implementation of

digitalization is a key factor in strengthening the competitiveness of MSMEs, both nationally and globally, with the use of e-commerce platforms as a key strategic instrument.

Only around 25.5 million MSMEs, or approximately 38% of the total MSMEs in the country, had gone digital by mid-2024, despite the Indonesian government's target of 30 million MSMEs going digital by 2024 (AntaraNews, 2024). Only 22 million MSMEs were actively using digital platforms, according to data from the Institute for Development of Economics and Finance (INDEF) in 2023 (AntaraNews, 2023). This fact indicates that despite the rapid growth of digitalization, MSMEs are still lagging behind in technology adoption.

MSME growth has been shown to benefit from digital transformation through e-commerce. According to Setiawan (2023), the implementation of e-commerce significantly increases revenue and expands the market for MSMEs across various industries. This aligns with research by Silviawati et al. (2025), which shows that e-commerce drives product innovation and operational efficiency in addition to improving market access. However, the study also highlighted that low digital literacy, inadequate internet infrastructure, and lack of funding are key challenges faced by MSMEs in the digitalization process.

Furthermore, a quantitative study conducted in the Special Region of Yogyakarta Province by Titasari (2024) found that the simultaneous implementation of digital payments and e-commerce significantly impacted MSME revenues in the region. Both digital payments and e-commerce significantly impacted MSME revenues. Handayani (2023) also highlighted how digital literacy initiatives significantly impact MSMEs' ability to optimally utilize e-commerce.

Therefore, in terms of increasing productivity, efficiency, and competitiveness, digitalization and e-commerce have significantly impacted the growth of MSMEs in Indonesia. However, a number of structural and cultural challenges remain in the way of this transformation. The purpose of this study is to analyze how digitalization and e-commerce have influenced the growth of MSMEs in Indonesia. Specifically, this study will examine the extent to which the application of digital technology can improve business performance and how challenges can be overcome to create inclusive and sustainable MSMEs in the digital economy era.

Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) occupy a crucial position as one of the main pillars of the Indonesian economic system. Data released by the Ministry of Cooperatives and Small and Medium Enterprises in 2024 shows that this sector contributed approximately 61.97% to the national Gross

Domestic Product (GDP) and accommodated approximately 97% of the total workforce in the country. This fact confirms that the role of MSMEs is not limited to driving economic activity but also serves as a crucial instrument in promoting equitable social welfare. Within the framework of sustainable economic development, MSMEs are a key pillar in job creation and strengthening regional economic resilience. The existence of MSMEs can stimulate local economic activity and increase the economic resilience of communities, especially amidst the dynamics of global economic change.

Nevertheless, the development of MSMEs still faces various challenges, both structural and cultural, particularly in the digital era. Handayani (2023) stated that most MSMEs still experience limitations in technological literacy, access to financing, and the ability to adapt to digital market developments. This lack of understanding of the use of information and communication technology prevents many MSMEs from optimally implementing digital transformation. Therefore, efforts to increase the digital capacity of MSMEs through training, ongoing mentoring, and inclusive policy support are crucial. These steps are necessary to ensure business continuity and increase MSME competitiveness so they can survive and thrive amidst the demands of the modern economy.

Digitalization of MSMEs

Digitalization in the Micro, Small, and Medium Enterprises (MSMEs) sector can be understood as an effort to integrate digital-based technology into business activities to improve operational process effectiveness, expand market access, and strengthen a business's competitive position. According to Setiawan (2024), digital adoption not only accelerates transaction mechanisms but also provides opportunities for MSMEs to reach a wider market segment through the use of online platforms. Through this digital transformation process, MSMEs are able to maximize the use of social media, cashless payment systems, and digital-based logistics services, which in an integrated manner contribute to increased revenue and business performance efficiency.

Despite the significant benefits, digital adoption among MSMEs remains relatively low. According to the INDEF report (2023), only around 22 million MSMEs actively use digital platforms, while the Ministry of Cooperatives and SMEs (2024) recorded an increase to 25.5 million MSMEs the following year. This trend demonstrates a positive trend, but the digital divide between regions remains a major challenge. Lack of internet infrastructure and low digital literacy in some regions hamper the acceleration of this transformation. Therefore, government support is needed through strategic policies and

technology-based training so that all MSMEs can participate equally in the digital economy.

E-Commerce as a Means of Digital Transformation

Electronic commerce (e-commerce) is a crucial component in accelerating the digitalization process of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. The existence of e-commerce platforms provides a space for businesses to promote products with a wider market reach, accelerate the buying and selling process, and reach consumers from various regions without geographical boundaries. In line with this, the Indonesian Government (2024) is encouraging the digital empowerment of MSMEs through the MSME Go Digital program, designed to improve the digital competence and capacity of small and medium enterprises (SMEs) so they can compete effectively, both nationally and internationally.

However, the use of e-commerce is not yet fully optimal among MSMEs. Several obstacles are still frequently encountered, such as low digital literacy skills, limited funding for technology procurement and development, and lingering doubts about the security and reliability of online transactions. These conditions are major inhibiting factors in the comprehensive implementation of digital-based marketing and sales systems. Handayani (2023) states that strengthening digital literacy through planned training and ongoing mentoring is a strategic step to overcome these challenges. Furthermore, close collaboration between the government, businesses, and educational institutions is needed to build an inclusive and sustainable digital ecosystem. This synergy is expected to accelerate the transformation of MSMEs, making them more adaptive and competitive amidst the evolving digital economy.

Factors Influencing E-Commerce Adoption by MSMEs

E-commerce adoption among MSMEs is influenced not only by technological factors but also by social and psychological aspects. According to Santika & Yuhasril (2025), the level of trust in online systems, perceived ease of use of applications, and social support are key factors encouraging MSMEs to utilize digital platforms. Therefore, achieving digital transformation is not solely determined by the availability of technological infrastructure but is also significantly influenced by shifts in business perspectives and cultures that increasingly embrace and encourage innovation.

RESEARCH METHOD

This research employs a qualitative method through a literature review approach. This approach was carried out by collecting and reviewing various information sources and previous research findings that discuss digitalization

and e-commerce among MSMEs in Indonesia, particularly literature published between 2020 and 2025. The data used is secondary and analyzed descriptively to gain an understanding of the application of digital technology and its impact on the development of small and medium enterprises. Through this literature review, the research is expected to present a comprehensive overview of the opportunities, constraints, and impacts of digitalization on the progress of MSMEs in the modern era.

RESULT AND DISCUSSION

Digitalization and E-Commerce on the Development of MSMEs in Indonesia

E-commerce and various internet-based activities can be important drivers for improving MSME performance, particularly through the liberalization of domestic services and the acceleration of MSME integration into the global production chain. In general, the process of buying and selling goods and services through digital technology is known as e-commerce (Indrajaya et al., 2022). Since early 2022, Bank Indonesia has launched four main programs to help accelerate MSME digitalization. These four programs are e-Farming, e-Commerce, and e-Payment (Sari et al., 2024). E-commerce platforms and digital technologies such as AI, big data, and IoT provide more opportunities for MSMEs to enter and compete internationally. With these technologies, MSMEs can improve their operational efficiency and adapt more quickly to market dynamics and changes (Sonani et al., 2024).

According to Rohmah (in Purba et al., 2023:440), appropriate and effective marketing is a crucial factor in helping MSMEs sell their products. The presence of digital marketing enables businesses to achieve optimal results through two-way marketing communications. Various methods such as SEM (Search Engine Marketing), social media (LinkedIn, Instagram, etc.), digital advertising (Facebook Ads, Google Ads, YouTube Ads), and SEO (Search Engine Optimization) can be utilized as online marketing tools. With digital marketing, manufacturers can also more easily calculate their Return on Investment (ROI). These features help businesses disseminate their product promotional content to various regions, even across countries, according to market needs and demands.

Positive Opportunities from Digitalization and E-Commerce

Micro, small, and medium enterprises (MSMEs) in Indonesia play a crucial role in driving economic growth and social welfare. However, many MSMEs have yet to adopt digital technology, which can hinder their growth and competitiveness (Pratamansyah, 2024). Numerous studies have emphasized the effectiveness of e-commerce and its advantages and

disadvantages. Currently, many businesses, both small and large, are using e-commerce to improve their operations (Alwendi, 2020).

In the area of MSME product marketing, e-commerce has become a crucial component in increasing opportunities for small businesses and reaching a wider market. By integrating digital technology into their marketing processes, MSMEs can become significantly more competitive in an increasingly integrated global market. E-commerce platforms enable MSMEs to offer their products more effectively, expand their customer base, and optimize their marketing strategies (Muhibbusaabry, et al., 2024). According to Solechan et al. (2023), product marketing processes and operations from producers to consumers will be faster, services will be improved, trust will be strengthened, and data exchange will be more secure on platforms as a result of digital transformation. Furthermore, digital transformation will provide opportunities to form a new entrepreneurial ecosystem capable of competing with international competitors.

The goal of digitalization is to improve the competitiveness and quality of Indonesian MSMEs so they can reach higher levels. The government targets 30 million MSMEs to switch to digital platforms by 2024, and approximately 19 million of them have already done so (Darmastuti et al., 2023). According to a study on MSMEs (Nugroho & Andarini, 2020), small and medium enterprises (MSMEs) operating in rural areas have the ability to utilize digital technology in ways that align with local values. This technology helps rural entrepreneurs adapt to modern market requirements. Promotion on social media is also faster and more effective in reaching customers. Currently, there are many ways to promote yourself online, such as on Facebook, Instagram, Twitter, TikTok, YouTube, and WhatsApp (Ilyas & Hartono, 2023). A study conducted by Google and Tamasek found that increasing the number of internet users can help accelerate the growth of the digital economy and the internet in Indonesia. The formal e-commerce market is worth \$5 billion and the informal e-commerce market is worth over \$3 billion, which can contribute to the growth of Indonesia's digital economy (Maharani, 2024).

Theoretically, the use of digital platforms should benefit business development. Small and medium-sized businesses (MSMEs) must transform to remain competitive due to technological advances. Using digital platforms makes it easier for MSMEs to reach customers, especially since today's customers are active on social media and tend to prefer online shopping. Many MSMEs use digital platforms to make payments with consumers and distribute information about their products. ShopeeFood, GrabFood, GoFood, Traveloka Eats, and QRIS are some popular platforms that enable direct interaction,

information, and payments. Besides being easy to use, these digital platforms make payments more secure for MSMEs. Some MSMEs even reported increased turnover after joining digital platforms (Shakira et al. 2023).

According to Angeline et al. (2022), many MSMEs pivoted their businesses by moving into new industries such as food delivery services, which helped the country's economic recovery. Research by Alfaqih (2025) found that e-commerce significantly impacted the growth of MSMEs in Indonesia, particularly in terms of improving operational efficiency, optimizing costs, and increasing market reach. Strong digital skills enable MSMEs to adapt to technological advances and effectively utilize various digital functions. The use of e-commerce increases operational efficiency and opens up growth opportunities through broader market access. Consequently, all stakeholders, including the government, business actors, and training institutions, must consistently commit to improving the digital capabilities of MSMEs through training, infrastructure, and legal support. This approach is crucial to building an inclusive and adaptive digital ecosystem. This ecosystem must have the ability to encourage MSMEs to become strong pillars of the economy in the era of digital transformation.

Challenges and Negative Impacts of Digitalization and E-Commerce

Digital economic transformation has become an increasingly important phenomenon in the era of globalization and digitalization, impacting nearly every aspect of human life. On the one hand, this transformation fosters global economic growth, provides opportunities for business innovation, and enhances international partnerships. However, digital economic transformation also presents a number of challenges, including regulatory issues, low public skills and awareness, and limited technological infrastructure (Sudiantini et al. 2023). According to Juwita and Handayani (2022), among the main challenges faced by MSMEs in the context of digitalization are those related to human resources, infrastructure and information systems, networks, and social and behavioral aspects. Digital economy startups are rapidly adopting innovation and competition, leading to the digital economy being referred to as a "sharing economy," which encourages businesses to outperform small and medium-sized enterprises (SMEs). Furthermore, a balance must be struck between business needs and capabilities, particularly for small and medium-sized businesses, to improve the customer experience. Regulation must be balanced to meet the rights and obligations of both consumers and businesses. (Aysa, 2021)

Limited access to information, capital, and adequate business networks is one of the main obstacles to business development. To address this issue, the

Indonesian government has launched several policies to encourage the growth of MSMEs. One of these is the Independent MSME Program, which aims to help MSMEs develop independently. The government also offers additional policies such as financing facilities and increasing MSMEs' access to business networks and information. (Alviani & Munawaroh, 2025)

Limited infrastructure and internet access in some areas are another major challenge for the e-commerce sector. The e-commerce sector must urgently address consumer security and protection issues. When it comes to cybercrime and cyberwarfare, consumers often face threats such as fraud, identity theft, purchasing counterfeit goods, account hacking, the spread of viruses through websites, and defamation (Ramli et al. 2022). To protect consumers from e-commerce transactions, all parties involved, including sellers, e-commerce platforms, and consumers, must take concrete action. Consumers must be more careful and thorough when selecting trusted products, sellers, and e-commerce platforms, and understand their rights and obligations during e-commerce transactions (Pratama & Apriani, 2024).

Furthermore, government regulations protecting consumer and personal data hinder e-commerce businesses. Strict regulations requiring companies to manage consumer data more rigorously and transparently have been adopted by many countries (Puspita, 2023). Complying with these regulations requires additional funding for technological infrastructure and human resource training. Small and medium-sized businesses must adapt their operations to comply with regulations without disrupting their core operations, posing a significant challenge (Kamila et al., 2025).

CONCLUSION

Digitalization and e-commerce have had a significant impact on the development of MSMEs in Indonesia. The use of digital technology helps businesses conduct operations more efficiently, promote products widely, and reach consumers across diverse regions without geographical boundaries. Platforms such as marketplaces, social media, and digital payment services help MSMEs increase sales, strengthen customer relationships, and adapt business strategies to changing market trends. The ability of MSMEs to adopt digital innovation is a determining factor in maintaining competitiveness in a constantly evolving economic environment.

Despite presenting numerous opportunities, the digitalization process for MSMEs still faces several challenges that require attention. Low digital literacy, limited internet infrastructure in certain areas, and concerns about data security and online transactions remain obstacles for many businesses. Furthermore,

many MSMEs still require mentoring, access to financing, and training to effectively use technology. Therefore, collaboration between the government, the private sector, and educational institutions is needed to support the creation of a better digital ecosystem. With appropriate support, MSMEs in Indonesia have the potential to grow stronger, more sustainable, and more competitive in the digital era.

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