



Sustainable Business Model: MSME System Digitalization and Its Impact on Profitability

Priyete Lala Sary¹, Jen Surya^{2*}, Rahmi³, Syakirah Imtiman⁴, Raudhatul Amalia⁵

^{1,2,3,4,5} Faculty of Economics, Universitas Serambi Mekkah, Banda Aceh - Indonesia

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*Correspondence Email:

Jen.surya@serambimekkah.ac.id

Abstract

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the economy in many countries, including Indonesia. MSMEs make significant contributions to job creation, local economies, and social stability. However, many MSMEs face significant challenges in managing supply chains, product distribution, and marketing, which often hinder their growth potential. The digitalization of MSME systems emerges as a solution to address these issues, as technology enables automation, operational efficiency, and expanded market access. This article explores the concept of a sustainable business model that integrates digitalization into MSME operational systems and its impact on profitability. The main focus of this study is on how digital technology can improve efficiency, open new markets, and drive long-term sustainability. By including case analyses, data, and relevant illustrations, this article aims to provide practical insights for MSMEs to optimize their digitalization efforts for higher profitability.

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a significant role in Indonesia's economy, contributing more than 60% to the Gross Domestic Product (GDP) and providing the majority of employment in non-agricultural sectors (Tambunan, 2023). However, MSMEs face various significant challenges, including limited access to advanced technology, capital constraints, difficulties in marketing, and issues with product distribution. Without operational resilience, MSMEs are at risk of being left behind in an increasingly competitive global market (Agarwal et al., 2023). The adoption of digital technology has become a necessary step to drive sustainability and improve profitability (Javaid et al., 2022). However, implementing digitalization is not without challenges. Many MSMEs struggle to utilize technology efficiently due to a lack of knowledge, resources, and sufficient initial investment.

In this context, digitalization refers to the application of technology in various operational aspects of MSMEs, such as using financial management software, e-commerce systems to expand markets, or social media platforms to reach broader customer bases. Technology enables MSMEs to streamline their processes, from inventory management to customer analytics, ultimately increasing efficiency and reducing costs (Maheshwari et al., 2021; Panigrahi et al., 2024). Thus, digitalization offers significant potential to improve MSME profitability and long-term sustainability. However, despite its potential, many MSMEs remain reluctant to transform due to challenges such as high costs and uncertainty in adopting technology.

1.1 Literature Review

This study is essential to explore how digitalization can enhance sustainable business models for MSMEs and its impact on improving their profitability (Gao et al., 2023). While MSMEs possess extraordinary potential, they often encounter limitations in accessing technology resources (Gupta & Barua, 2016). Despite the rapid advancement of digital technology and increasing internet penetration across Indonesia, many MSMEs struggle to optimize technology in their business processes. There is also a disparity in digital technology adoption among MSMEs, mainly due to a lack of understanding of the necessary technology and the required investments.

The research aims to identify the impact of digitalization on MSME profitability. Additionally, it delves into exploring factors that influence MSMEs' adoption of digital technology, including organizational behavior, government policies, and perceived risks associated with technology investment. Understanding these challenges and solutions is expected to help MSMEs maximize the potential of digitalization and enhance their competitiveness at local and global levels.

While digital technology has been widely implemented in various industrial sectors, its application within MSMEs in Indonesia remains limited. This study highlights the significant gap between the potential of digital technology and the realities in the field. Many MSMEs that still rely on traditional methods struggle to transition to digital systems. One primary reason for this gap is a lack of understanding of the long-term benefits of digitalization, compounded by insufficient investments in training and infrastructure. Moreover, the high cost of advanced digital tools and the lack of financial support make technology adoption particularly challenging for MSMEs with limited capital.

Digitalization in MSMEs is also hindered by the inability to accurately assess the effectiveness of implemented technology. MSME operators must know whether their chosen technology is yielding optimal results. Therefore, this article aims to provide insights into the challenges faced by MSMEs and offer practical recommendations to address these issues.

2. Research Methods

A sustainable business model for MSMEs is not only about financial profits but also about the ability to sustain themselves in the long term by integrating social and environmental sustainability (Khurana et al., 2019). Digitalization plays a crucial role in achieving this by enabling MSMEs to operate more efficiently and reduce waste (Martínez-Peláez et al., 2023; Mondal et al., 2023). One way for MSMEs to leverage digitalization to support sustainability is by adopting technology-based management systems. For example, cloud-based inventory management systems can help MSMEs monitor goods flow in real-time, optimize inventory management, and minimize losses due to overstocking or understocking.

The following graph illustrates the comparison of the impact of digitalization on three key categories: operational efficiency, profitability, and waste reduction, before and after digitalization implementation in MSMEs. The results show significant improvements in all categories after digitalization. Operational efficiency increased from 60% to 85%, while profitability rose from 50% to 75%. Additionally, waste reduction experienced substantial growth from 40% to 70%.

This graph highlights that digitalization not only contributes to increased productivity and profitability but also supports sustainability aspects through better waste management. It underscores the importance of adopting digital technology to optimize MSME performance and environmental impact.

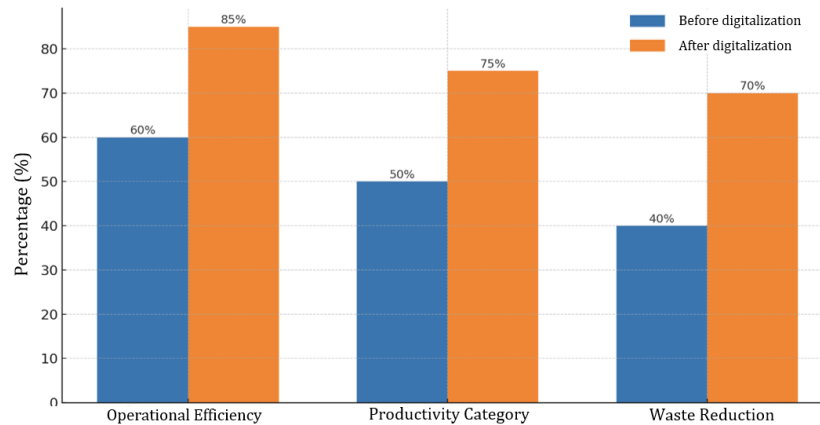


Fig 1. The Effect of Digitalization on the Sustainability of MSMEs Source: (Putri et al., 2020; Salmizi et al., 2024)

The graph above illustrates the impact of digitalization on MSME performance in three key aspects: operational efficiency, profitability, and waste reduction. Before digitalization, MSMEs' operational efficiency stood at 60%; however, after digitalization, it increased significantly to 85%. Profitability also experienced a surge from 50% before digitalization to 75% afterward, reflecting how digitalization drives more effective financial and marketing management. Additionally, waste reduction improved from 40% to 70% after digitalization, demonstrating that technology helps MSMEs manage inventory and production processes more efficiently, thereby reducing waste. This graph emphasizes the role of digitalization as a strategic step for MSMEs to achieve long-term sustainability while continuing to enhance profitability and operational efficiency.

Furthermore, digital technology simplifies the process for MSMEs to design products that are more environmentally friendly or better suited to consumer preferences. By leveraging data analytics, MSMEs can predict market trends and respond quickly to changes in demand, improving efficiency and reducing the risk of losses. For instance, data-driven applications can help MSMEs analyze purchasing patterns, set more accurate prices, and organize appropriate promotions. Such innovations not only boost profitability but also contribute to sustainability in the long term.

3. Results and Discussion

Digitalization brings numerous benefits to MSMEs, one of which is the ease of improving operational efficiency (Bagale et al., 2021). An example of its application is the use of e-commerce systems that enable MSMEs to sell their products online, access broader markets, and increase sales. In this context, digitalization not only helps MSMEs expand their markets but also allows them to operate more efficiently. E-commerce platforms enable MSMEs to reduce distribution costs by allowing them to market their products directly to consumers without intermediaries. This contributes to higher profit margins (Amornkitvikai et al., 2022).

The following graph illustrates the relationship between the level of digitalization and its impact on operational efficiency and profitability in MSMEs. The results show that increasing levels of digitalization consistently provide significant benefits for both indicators. At low levels of digitalization, the impact on operational efficiency and profitability remains relatively small. However, at moderate and high levels of digitalization, the impact increases significantly, with operational efficiency reaching its peak, followed by a substantial rise in profitability.

This graph highlights the importance of adopting digital technology as a key strategy to improve MSME performance and sustainability in the digital era.

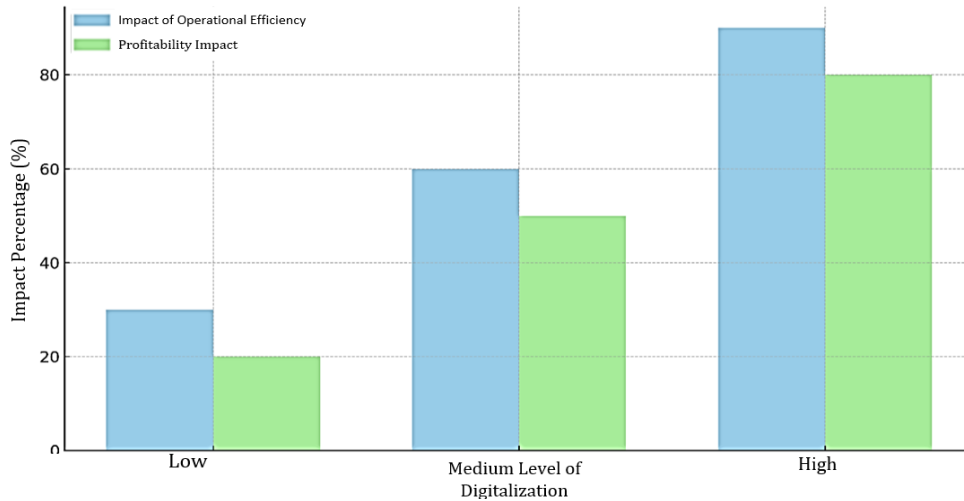


Fig 2. Graph of the impact of digitalization on operational efficiency and profitability Source: (Bagale et al., 2021; Kurnia & Johnston, 2000)

The displayed graph illustrates the impact of digitalization on the operational efficiency and profitability of MSMEs based on the levels of digitalization implemented: low, medium, and high. The higher the level of digitalization adopted by MSMEs, the greater the positive impact observed in terms of operational efficiency and profitability. MSMEs that adopt digital technology comprehensively, such as e-commerce, cloud-based inventory management systems, and accounting applications, tend to experience significant improvements in operational efficiency. This is evident from reduced distribution costs, more accurate transaction management, and reduced human errors in financial recording and planning.

Additionally, improved profitability is reflected in the ability of MSMEs to reach broader markets, optimize cash flow, and enhance their competitiveness in the marketplace. The graph emphasizes that digitalization not only boosts operational efficiency but also directly contributes to increased profitability and long-term sustainability for MSMEs.

Moreover, with the proper implementation of digitalization, MSMEs can better manage their financial aspects, such as more accurate transaction recording, transparent cash flow planning, and more efficient debt and receivables management. This will have a direct impact on the financial stability and profitability of MSMEs. Therefore, digitalization in financial management systems can provide significant long-term benefits, particularly in reducing operational costs and optimizing resource allocation.

4. Conclusion

Digitalization has emerged as a transformative tool for MSMEs, offering the potential to build sustainable business models in an increasingly competitive market. By adopting digital technology, MSMEs can significantly enhance their operational efficiency, reduce costs, and expand market reach. Technology-driven management systems streamline business processes, from inventory tracking to product marketing, resulting in improved productivity and higher profitability. More importantly, digitalization equips MSMEs with the agility needed to adapt to market changes, fostering resilience and long-term sustainability.

To fully realize these benefits, it is essential for MSMEs to invest in the development of their human resources through training and capacity-building programs. Additionally, supportive policies from the government and private sector, such as subsidies, infrastructure improvements, and access to affordable digital tools, play a pivotal role in accelerating digital transformation. With the right support systems in place, MSMEs can better manage financial operations, optimize resource allocation, and strengthen their competitive edge both locally and globally.

Ultimately, digitalization is no longer a choice but a necessity for MSMEs to thrive in the digital economy. It empowers them to overcome traditional barriers, compete effectively in international markets, and contribute to inclusive economic growth. By embracing digitalization, MSMEs can unlock new opportunities, ensuring their relevance and success in the rapidly evolving global business landscape.

5. Reference

- Agarwal, V., Mathiyazhagan, K., Malhotra, S., & Pimpunchat, B. (2023). Building resilience for sustainability of MSMEs post COVID-19 outbreak: An Indian handicraft industry outlook. *Socio-Economic Planning Sciences*, 85, 101443.
- Amornkitvikai, Y., Tham, S. Y., Harvie, C., & Buachoom, W. W. (2022). Barriers and factors affecting the e-commerce sustainability of Thai Micro-, Small-and Medium-Sized Enterprises (MSMEs). *Sustainability*, 14(14), 8476.
- Bagale, G. S., Vandadi, V. R., Singh, D., Sharma, D. K., Garlapati, D. V. K., Bommisetti, R. K., Gupta, R. K., Setiawan, R., Subramaniaswamy, V., & Sengan, S. (2021). *Small and medium-sized enterprises' contribution in digital technology*. Petra Christian University.
- Gao, J., Siddik, A. B., Khawar Abbas, S., Hamayun, M., Masukujjaman, M., & Alam, S. S. (2023). Impact of E-commerce and digital marketing adoption on the financial and sustainability performance of MSMEs during the COVID-19 pandemic: An empirical study. *Sustainability*, 15(2), 1594.
- Gupta, H., & Barua, M. K. (2016). Identifying enablers of technological innovation for Indian MSMEs using best-worst multi criteria decision making method. *Technological Forecasting and Social Change*, 107, 69–79.
- Javaid, M., Haleem, A., Singh, R. P., Suman, R., & Gonzalez, E. S. (2022). Understanding the adoption of Industry 4.0 technologies in improving environmental sustainability. *Sustainable Operations and Computers*, 3, 203–217.
- Khurana, S., Haleem, A., & Mannan, B. (2019). Determinants for integration of sustainability with innovation for Indian manufacturing enterprises: Empirical evidence in MSMEs. *Journal of Cleaner Production*, 229, 374–386.
- Kurnia, S., & Johnston, R. B. (2000). The need for a processual view of inter-organizational systems adoption. *The Journal of Strategic Information Systems*, 9(4), 295–319.
- Maheshwari, P., Kamble, S., Pundir, A., Belhadi, A., Ndubisi, N. O., & Tiwari, S. (2021). Internet of things for perishable inventory management systems: an application and managerial insights for micro, small and medium enterprises. *Annals of Operations Research*, 1–29.
- Martínez-Peláez, R., Ochoa-Brust, A., Rivera, S., Félix, V. G., Ostos, R., Brito, H., Félix, R. A., & Mena, L. J. (2023). Role of digital transformation for achieving sustainability: mediated role of stakeholders, key capabilities, and technology. *Sustainability*, 15(14), 11221.
- Mondal, S., Singh, S., & Gupta, H. (2023). Green entrepreneurship and digitalization enabling the circular economy through sustainable waste management-An exploratory study of emerging economy. *Journal of Cleaner Production*, 422, 138433.
- Panigrahi, R. R., Shrivastava, A. K., & Nudurupati, S. S. (2024). Impact of inventory management on SME performance: a systematic review. *International Journal of Productivity and Performance Management*.
- Putri, K. Y. S., Suseno, D. A., Wibowo, A., & Wardana, L. W. (2020). Influence of information technology towards the development economics of SMEs in Indonesia. *Humanities*, 8(3), 280–291.
- Salmizi, A. N., Abd Aziz, N. N., Wahid, N. A., & Ramli, N. A. (2024). Exploring Technology-Organization-Environment Research Trends in Small and Medium-sized Enterprises (SMEs): A Scientometric Review. *Global Business & Management Research*, 16(1).
- Tambunan, T. T. H. (2023). The Potential Role of MSMEs in Achieving SDGs in Indonesia. In *Role of Micro, Small and Medium Enterprises in Achieving SDGs: Perspectives from Emerging Economies* (pp. 39–72). Springer.