

# Strategies for Improving the MSME Economy through the Implementation of Technology-Based Business Management

Moh. Muklis Sulaeman<sup>1\*</sup>, Anjelina Sindy Parwati<sup>2</sup>, M. Sholla Alfatih Saputra<sup>3</sup>, Ririn Pinatih<sup>4</sup>, Khoirul Abidin<sup>5</sup>

<sup>1,2,3,4,5</sup> Universitas Islam Lamongan, Jawa Timur, Indonesia

## ARTICLE INFO

### Article history:

Received: 13 July 2024

Revised: 14 July 2024

Accepted: 15 July 2024

### DOI:

10.61100/tacit.v2i2.193

### Keywords:

MSME Economy, Business Management, Technology



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License

## ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in Indonesia's economy. They significantly contribute to the Gross Domestic Product (GDP) and provide employment opportunities for a large portion of the workforce in the country. Despite their pivotal role, MSMEs often face various challenges such as limited access to capital, technology, and broader markets. These obstacles hinder their growth and competitiveness both nationally and globally. This research aims to identify effective strategies to enhance the economic growth of MSMEs through the implementation of technology-based business management. The method employed in this study is a literature review using a qualitative approach and descriptive analysis. Data sourced from articles indexed in Google Scholar between 2010 and 2024. The study findings indicate that enhancing the economic viability of MSMEs through technology-based business management is a crucial strategic step in navigating the increasingly competitive global market. MSMEs play a vital role in Indonesia's economy as primary contributors to job creation and inclusive economic growth.

## ABSTRAK

Usaha Mikro, Kecil, dan Menengah (UMKM) memiliki peran krusial dalam perekonomian Indonesia. Mereka menyumbang signifikan terhadap Produk Domestik Bruto (PDB) dan menyediakan lapangan kerja bagi sebagian besar tenaga kerja di negara ini. Meskipun memiliki peran penting, UMKM sering kali menghadapi berbagai tantangan seperti keterbatasan akses terhadap modal, teknologi, dan pasar yang lebih luas. Hal ini menghambat pertumbuhan dan daya saing mereka di tingkat nasional maupun global. Penelitian ini bertujuan untuk mengidentifikasi strategi efektif dalam meningkatkan ekonomi UMKM melalui implementasi manajemen bisnis berbasis teknologi. Metode yang digunakan dalam penelitian ini adalah tinjauan pustaka dengan pendekatan kualitatif dan analisis deskriptif. Data yang digunakan diambil dari artikel-artikel yang terindeks di Google Scholar dalam rentang tahun 2010-2024. Hasil studi menunjukkan bahwa peningkatan ekonomi UMKM melalui implementasi manajemen bisnis berbasis teknologi merupakan langkah strategis yang krusial dalam menghadapi persaingan pasar global yang semakin ketat. UMKM memainkan peran penting dalam perekonomian Indonesia sebagai penyumbang utama lapangan kerja dan pertumbuhan ekonomi yang inklusif.

## 1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in the dynamics of Indonesia's economy, with their significant contribution to the Gross Domestic Product (GDP) and their role as the primary drivers of job creation. According to the Ministry of Communication and Information Technology (Kominfo), there are currently 64.2 million MSMEs contributing around 61% to Indonesia's GDP. In terms of workforce, MSMEs also absorb 97% of the total labor force in the country, approximately 119.6 million people. The involvement of MSMEs across various economic sectors demonstrates their diverse contributions, ranging from agriculture to the creative industries. Beyond being economic contributors, MSMEs also strengthen na-

\* Corresponding author, email address: mohmuklis@unisla.ac.id

tional economic resilience by diversifying the economic base, reducing social inequality, and enhancing financial inclusion across Indonesia (Ausat & Suherlan, 2021).

Despite playing a crucial role in Indonesia's economy, MSMEs often face significant challenges such as limited access to capital, technology, and international markets (Ausat & Peirisal, 2021). These constraints not only slow down the growth rate of MSMEs but also diminish their competitiveness on both national and international scales. Expanding access to these resources is key to enhancing the ability of MSMEs to contribute more significantly to inclusive and sustainable economic development in Indonesia.

The Fourth Industrial Revolution has brought about profound transformation in the global business landscape through the ongoing development of digital technologies. Advanced technologies such as the Internet of Things (IoT), big data analytics, and artificial intelligence (AI) present substantial opportunities for Micro, Small, and Medium Enterprises (MSMEs) to enhance operational efficiency and productivity. Moreover, the adoption of these technologies can also help MSMEs compete more effectively in the global market, expand their market reach, and increase competitiveness within an increasingly digitally connected business ecosystem (Sudirjo et al., 2023).

Technology-based business management refers to strategies involving the use of various digital tools and platforms to manage business operations, marketing, sales, and finance. This implementation encompasses solutions such as e-commerce platforms facilitating online transactions, automated and integrated inventory management systems, and deep data analytics to improve strategic decision-making processes (Ausat et al., 2022).

The utilization of technology significantly contributes to Micro, Small, and Medium Enterprises (MSMEs) in optimizing their operational processes, reducing costs, improving the quality of products and services they offer, and expanding global market coverage. The presence of technology can impact internal efficiency within MSMEs and enable them to respond to customer needs and preferences more swiftly and accurately (Subagja et al., 2022).

A notable example is Tokopedia, which began as an MSME and has grown into one of Indonesia's largest e-commerce companies. Through digital platforms, Tokopedia successfully expanded its market reach, increased sales, and provided better services to customers. Other MSMEs, such as Kopi Kenangan, have also leveraged technology to rapidly expand their businesses through online ordering applications and effective customer management systems.

The Indonesian government has initiated various programs and policies to support the digitalization of MSMEs, such as the National Movement for 1000 Digital Startups, the MSME Go Online Program, and training through the Digital Talent Scholarship. These programs provide access to technology, digital training, and financial incentives, all aimed at promoting technology-based growth among MSMEs.

Based on the above explanations, this research aims to identify effective strategies for enhancing MSMEs' economies through the implementation of technology-based business management. The study will explore various factors influencing the successful implementation of technology, challenges encountered, and its impact on MSMEs' growth.

## **2. THEORETICAL FRAMEWORK AND HYPOTHESES**

### **MSME Economy**

Micro, Small, and Medium Enterprises (MSMEs) engage in economic activities that play a vital role in a country's economy, including Indonesia. MSMEs significantly contribute to the Gross Domestic Product (GDP) and provide employment opportunities for the majority of the workforce, thus serving as the backbone of both local and national economies (Ausat et al., 2023). Additionally, MSMEs contribute to poverty reduction and economic inequality by offering business opportunities to low-income communities (Kamar et al., 2022). Despite their substantial contributions, MSMEs often face various challenges such as limited access to capital, technology, and broader markets, which hinder their growth and competitiveness. Therefore, strengthening and developing MSMEs through various strategies, including the adoption of technology, becomes crucial to supporting stability and sustainable economic growth.

### **Business Management**

Business management is the process of planning, organizing, coordinating, and controlling business resources and activities to achieve predefined goals (Longenecker & Moore, 2010). It encompasses the manage-

ment of all operational and strategic aspects of a company or organization, including finance, human resources, marketing, production, and risk. Business management not only focuses on resource efficiency and business process optimization but also on innovation, adaptation to market changes, and creating added value for customers and stakeholders (Ratnawita, 2023). Using structured approaches and relevant methodologies, business management aims to ensure the long-term sustainability and growth of a company amid the complexities of the global market dynamics.

### **Technology**

Technology refers to the practical application of scientific knowledge for practical purposes, especially in the development of devices, systems, or methods to facilitate human activities (Wahyoedi et al., 2023). It involves the use of technical and scientific knowledge in designing, developing, and utilizing tools, machines, systems, and processes that facilitate daily life and advancement across various sectors such as communication, transportation, healthcare, and industry. Technology encompasses various fields including Information and Communication Technology (ICT), green technology (environmentally friendly), biotechnology, nanotechnology, and artificial intelligence (AI), all aimed at enhancing efficiency, productivity, and overall human quality of life. With technology continually evolving, its usage and application are increasingly pervasive across various aspects of life, influencing how we work, communicate, and live in this modern era (Harahap et al., 2023; Sutrisno, Kuraesin, et al., 2023).

### **3. RESEARCH METHOD**

For this research, the method employed is a literature review using a qualitative approach and descriptive analysis. Data are sourced from articles indexed in Google Scholar spanning from 2010 to 2024. The study begins by identifying and collecting a total of 47 relevant articles from Google Scholar. Following rigorous selection criteria, 20 articles that are most pertinent and significantly contribute to this research topic are chosen. Descriptive analysis is then conducted on the selected articles to identify patterns, main themes, key findings, and different perspectives regarding the implementation of technology-based business management to enhance SME economic outcomes. This method aims to provide a comprehensive understanding of trends, challenges, and potential solutions in leveraging technology for SMEs within a dynamic economic context.

### **4. DATA ANALYSIS AND DISCUSSION**

The strategy to enhance the economic growth of MSMEs (Micro, Small, and Medium Enterprises) through the implementation of technology-based business management has become crucial in facing the increasingly competitive dynamics of the global market. MSMEs play a vital role in Indonesia's economy as the main contributors to employment and inclusive economic growth.

The application of technology in MSME business management has significant potential to optimize all aspects of their operations, including production efficiency, product quality improvement, and service enhancement (Triwahyono et al., 2023). One critical approach is through the integration of computerized management systems that enable better monitoring of inventory, financial management, and customer data analysis. For instance, platforms like TradeGecko, inFlow Inventory, or Fishbowl assist in efficiently managing inventory, including stock monitoring, purchasing, and shipping. By leveraging cutting-edge software in business management, MSMEs can enhance productivity and competitiveness not only domestically but also in the international market. This technology transforms how MSMEs operate, helping them adapt to the increasingly complex and competitive global market dynamics.

Training and education for MSME owners in technology proficiency play a crucial role in supporting the implementation of technology-based business management (Sutrisno, Permana, et al., 2023). Owners can identify specific technology needs and goals for their MSMEs, whether it's training to manage inventory more efficiently, market products through online platforms, or enhance customer service through CRM. Clear training objectives are essential for relevance and business needs alignment. This strategic step enhances individual capacity to effectively manage their enterprises while expanding access to broader markets through digital platforms and e-commerce. If owners adopt the right technology and understand how best to integrate it into daily operations, MSMEs can improve efficiency, expand market reach, and enhance competitiveness in today's digital economy. Such training transforms how MSMEs operate, preparing them to

tackle challenges and seize opportunities in the rapidly evolving and interconnected global market. Certainly, MSMEs can also benefit from training to enhance skills in using productivity applications such as Microsoft Office or G Suite. This includes spreadsheet use, word processing, presentations, and online collaboration tools.

The application of technology in marketing and product distribution for MSMEs significantly reduces promotion costs and expands their market reach. Through e-commerce platforms and social media, MSMEs can effectively build brand awareness and penetrate markets beyond their traditional geographical boundaries (Malik et al., 2022). Technology enables MSMEs to reach a broader audience at lower costs compared to conventional promotion methods like print ads or direct marketing. Moreover, leveraging analytic data from digital platforms provides valuable insights to optimize marketing strategies, tailor products to market preferences, and enhance operational efficiency. Integrating technology into marketing and distribution strategies enhances MSME competitiveness and enables them to adapt to dynamic changes in the global business environment.

The success of these strategies heavily relies on adequate digital infrastructure availability, including fast and stable internet access and assured data security. Support from the government and private sectors to enhance local-level digital infrastructure will be key in ensuring MSMEs can adopt technology to its fullest potential. For example, the government can facilitate easier access to financing and credit through financial institutions or special programs such as microcredit or small business capital assistance. Technical training and education programs can also help MSMEs enhance managerial, technological, and marketing skills to compete more effectively in the increasingly complex and digital market environment. Investment in digital infrastructure, such as providing fast and stable internet access and data security, enables MSMEs to adopt technology more effectively and access global markets through digital platforms and e-commerce. Reliable infrastructure facilitates technology integration into MSMEs' daily operations and opens up wider access to global markets through digital platforms and e-commerce (Kuleh et al., 2023). These steps transform how MSMEs operate and strengthen the foundation of an inclusive and sustainable digital economy at both local and national levels.

Enhancing MSME economic growth through technology-based business management can also be viewed from the perspective of local economic empowerment and digital inclusion (Athia et al., 2023). In Indonesia, there are numerous examples where MSMEs have successfully enhanced their performance through modern technology adoption. The 'National Movement for MSME Digitalization' initiated by the Indonesian government is a prime example of active support for the MSME sector. This program offers intensive training and comprehensive mentoring for MSME owners to adopt digital technology and provides incentives such as subsidies for acquiring necessary software and hardware. Integration into sophisticated systems like Enterprise Resource Planning (ERP) enables MSMEs to manage their operations more efficiently and effectively. Beyond supporting operational sustainability, this program also aims to enhance MSME competitiveness in an increasingly digitally connected global market. The government facilitates MSME digital transformation and strengthens the foundation of an inclusive and sustainable digital economy at both local and national levels through this initiative.

As an additional example, the government actively engages in initiatives to build digital infrastructure in remote areas through extensive and affordable internet network development programs. This step facilitates connectivity for rural MSMEs to access broader online markets, reducing their dependency on local sales and opening up larger business expansion opportunities nationally and internationally. Robust digital infrastructure streamlines daily MSME operations and enables them to access e-commerce platforms, reach new consumers, and enhance competitiveness in today's global digital economy (Richadinata et al., 2023). These efforts demonstrate the government's commitment to building an inclusive ecosystem and supporting sustainable economic growth across all regions of Indonesia.

The Indonesian government has taken further steps by launching local e-commerce platforms like Tokopedia, Bukalapak, and Shopee, providing channels for MSMEs to sell their products online and integrating efficient delivery services. These platforms offer opportunities for MSMEs to reach millions of consumers nationally and globally, overcoming traditional geographical limitations and increasing product exposure in digital markets. Leveraging established e-commerce infrastructure and technological support, MSMEs can expand their market reach, enhance competitiveness, and foster more inclusive economic growth throughout Indonesia (Arjang et al., 2023). This initiative transforms how MSMEs operate and provides significant impetus for them to participate in an increasingly dynamic and competitive digital trade ecosystem.

Success in enhancing MSMEs' capacity to adopt technology hinges on intensive support from various stakeholders, including the private sector and academia (Loo et al., 2023). Collaborative initiatives between universities and technology companies have been key in providing deep training and specific digital business consulting tailored to MSME needs. These partnerships enable MSMEs to access the latest knowledge in information technology management, digital marketing strategies, and modern business management system integration. This approach accelerates MSMEs' transition to the digital era and helps them overcome complex technology adaptation challenges. Collaboration between the education sector and industry supports the development of MSME skills and capacities, reinforcing the foundation of an inclusive and sustainable digital economy in Indonesia.

The integration of technology in MSME business management goes beyond enhancing operational efficiency and market access; it also plays a crucial role in strengthening their competitiveness in an increasingly interconnected era of globalization. These initiatives are supported by various government programs and sustained private sector initiatives, creating a conducive environment for MSMEs in Indonesia to maximize their potential. By adopting cutting-edge technologies such as ERP systems and data analytics, MSMEs can boost productivity, optimize supply chains, and respond more rapidly to market changes. Moreover, e-commerce integration enables MSMEs to penetrate national and international markets without significant geographical constraints. Playing a larger role in national economic growth, MSMEs also significantly contribute to creating more sustainable and plentiful job opportunities, reducing economic disparities between regions, and promoting social inclusion through increased access to economic opportunities.

**Tabel 1.** Enhancing SME Economic Growth through Technology-Based Business Management Strategies

No	Key Findings	Implications	Examples
1	SMEs play a vital role in Indonesia's economy, contributing significantly to employment and inclusive economic growth	Enhances local economic prosperity	Job creation and more balanced economic growth
2	Technology implementation in SME business management enhances production efficiency, product quality, and services	Expands market access and boosts SME competitiveness	Use of ERP systems to manage production and product quality
3	Integration of technology-based management systems allows effective inventory monitoring, financial management, and customer data analysis	Optimizes business operations and decision-making	Real-time inventory monitoring and data analysis for improved marketing strategies
4	Training and education for SME owners in technology adoption are crucial for improving business management effectiveness	Enhances managerial skills and adaptation to new technologies	Training on modern business management software
5	Technology in SME marketing and product distribution reduces promotion costs and expands market reach through e-commerce and social media	Opens opportunities for broader domestic and international market penetration	Selling SME products via e-commerce platforms like Tokopedia and Shopee
6	Adequate digital infrastructure support such as fast internet access and data security is crucial for the success of these strategies	Ensures smooth operations and information security	Building internet infrastructure in remote areas to support SMEs
7	Government programs like the "National Movement for SME Digitalization" provide training, software subsidies, and digital infrastructure support	Facilitates technology adoption and SME development	Subsidies for ERP software to enhance operational efficiency for SMEs
8	Local e-commerce platforms support online sales of SME products and facilitate distribution to domestic and international markets	Opens global market access for SMEs	Selling SME products internationally through local e-commerce platforms

## 5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

Improving the economic standing of MSMEs through the implementation of technology-based business management is a crucial strategic step in facing the increasingly competitive global market. MSMEs play a pivotal role in Indonesia's economy as major contributors to employment and inclusive economic growth. The implementation of technology in MSME business management has several positive implications. It not only enhances operational efficiency and product quality but also expands access to broader markets, both domestically and internationally. Additionally, technology adoption strengthens the competitiveness of MSMEs in today's digital era.

To maximize the potential of technology implementation in MSME business management, it is recommended to enhance education and training related to technology for business operators. Adequate digital infrastructure support is also essential, including fast internet access and assured data security. Moreover, collaboration among the government, private sector, and academia in providing technical support and guidance is crucial to help MSMEs effectively adopt technology. Despite its significant potential, implementing technology in MSMEs faces several challenges. These include limited understanding and technological skills among MSME owners, as well as digital infrastructure challenges in remote areas. Additionally, initial costs for technology adoption often pose constraints for MSMEs with limited scale and capital. Considering these conclusions, implications, recommendations, and limitations, appropriate strategic steps can be taken to enhance the contribution of MSMEs to Indonesia's economic growth through effective and sustainable implementation of technology-based business management.

## REFERENCES

- Arjang, A., Sutrisno, S., Permana, R. M., Kusumastuti, R., & Ausat, A. M. A. (2023). Strategies for Improving the Competitiveness of MSMEs through the Utilisation of Information and Communication Technology. *Al-Buhuts*, 19(1), 462–478.
- Athia, I., Soetjipto, B. E., & Efendi, E. (2023). The improvement of Micro, Small, and Medium Enterprises' (MSMEs) business performance during the COVID-19 pandemic through financial and digital literacy. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, 12(1), 92–109. <https://doi.org/10.26418/jebik.v12i1.58984>
- Ausat, A. M. A., & Peirisal, T. (2021). Determinants of E-commerce Adoption on Business Performance : A Study of MSMEs in Malang City , Indonesia. *Journal On Optimizations Of Systems At Industries*, 20(2), 104–114. <https://doi.org/10.25077/josi.v20.n2.p104-114.2021>
- Ausat, A. M. A., Siti Astuti, E., & Wilopo. (2022). Analisis Faktor Yang Berpengaruh Pada Adopsi E-commerce Dan Dampaknya Bagi Kinerja UKM Di Kabupaten Subang. *Jurnal Teknologi Informasi Dan Ilmu Komputer (JTIK)*, 9(2), 333–346. <https://doi.org/10.25126/jtiik.202295422>
- Ausat, A. M. A., & Suherlan, S. (2021). Obstacles and Solutions of MSMEs in Electronic Commerce during Covid-19 Pandemic: Evidence from Indonesia. *BASKARA: Journal of Business and Entrepreneurship*, 4(1), 11–19. <https://doi.org/10.54268/BASKARA.4.1.11-19>
- Ausat, A. M. A., Velmurugan, R., Mazil, M. M., Mazher, M. A., & Okombo, M. O. (2023). Utilisation of Natural Resources as a Source of Inspiration and Innovation in SME Development. *Apollo: Journal of Tourism and Business*, 1(3), 122–132. <https://doi.org/10.58905/apollo.v1i3.103>
- Harahap, M. A. K., Ausat, A. M. A., Rachman, A., Riady, Y., & Azzaakiyyah, H. K. (2023). Overview of ChatGPT Technology and its Potential in Improving Tourism Information Services. *Jurnal Mininfo Polgan*, 12(2), 424–431. <https://doi.org/10.33395/jmp.v12i2.12416>
- Kamar, K., Lewaherilla, N. C., Ausat, A. M. A., Ukar, K., & Gadzali, S. S. (2022). The Influence of Information Technology and Human Resource Management Capabilities on SMEs Performance. *International Journal of Artificial Intelligence Research*, 6(1.2), 1. <https://doi.org/https://doi.org/10.29099/ijair.v6i1.2.676>
- Kuleh, Y., Kadafi, M. A., & Ilmi, Z. (2023). Prospects of Digitalization of MSMs Business Expansion in Sepakat Village. *International Journal of Social Science and Business*, 7(3), 769–782. <https://doi.org/10.23887/ijssb.v7i3.53268>
- Longenecker, J., & Moore, C. (2010). *Small Business Management: An Entrepreneurial Emphasis*. SWC Publishing.
- Loo, M. K., Ramachandran, S., & Raja Yusof, R. N. (2023). Unleashing the potential: Enhancing technology adoption and innovation for micro, small and medium-sized enterprises (MSMEs). *Cogent Economics & Finance*, 11(2), 1–32. <https://doi.org/10.1080/23322039.2023.2267748>

- Malik, Z. A., Srisusilawati, P., Silviany, I. Y., Fajaria, R. M., & Tsania, S. C. (2022). Digital Marketing in Developing Brand Awareness of MSMEs. *Indonesian Journal of Business and Entrepreneurship*, 8(2), 282. <https://doi.org/10.17358/ijbe.8.2.282>
- Ratnawita, R. (2023). Digital Transformation in Business Management: Opportunities, Challenges and Implications. *Return: Study of Management, Economic and Bussines*, 2(9), 962–968. <https://doi.org/10.57096/return.v2i9.158>
- Richadinata, K. R. P., Ayuni, N. M. S., Purnamawati, N. L. G. P., & Widnyani, N. M. (2023). E-Commerce Platform Development as A Means of Increasing Potential MSME Business. *Journal of Economics and Public Health*, 2(3), 113–122. <https://doi.org/10.37287/jeph.v2i3.2478>
- Subagja, A. D., Ausat, A. M. A., & Suherlan. (2022). The Role of Social Media Utilization and Innovativeness on SMEs Performance. *Jurnal IPTEK-KOM (Jurnal Ilmu Pengetahuan Dan Teknologi Komunikasi)*, 24(2), 85–102. <https://doi.org/https://doi.org/10.17933/iptekkom.24.2.2022.85-102>
- Sudirjo, F., Ausat, A. M. A., Rijal, S., Riady, Y., & Suherlan, S. (2023). ChatGPT: Improving Communication Efficiency and Business Management of MSMEs in the Digital Age. *Innovative: Journal Of Social Science Research*, 3(2), 643–652. <https://doi.org/https://doi.org/10.31004/innovative.v3i2.347>
- Sutrisno, S., Kuraesin, A. D., Siminto, S., Irawansyah, I., & Ausat, A. M. A. (2023). The Role of Information Technology in Driving Innovation and Entrepreneurial Business Growth. *Jurnal Minfo Polgan*, 12(2), 586–597. <https://doi.org/https://doi.org/10.33395/jmp.v12i2.12463>
- Sutrisno, S., Permana, R. M., & Junaidi, A. (2023). Education and Training as a Means of Developing MSME Expertise. *Journal of Contemporary Administration and Management (ADMAN)*, 1(3), 137–143. <https://doi.org/10.61100/adman.v1i3.62>
- Triwahyono, B., Rahayu, T., & Kraugusteeliana, K. (2023). Analysing the Role of Technological Innovation in Improving the Operational Efficiency of MSMEs. *Jurnal Minfo Polgan*, 12(1), 1417–1426. <https://doi.org/10.33395/jmp.v12i1.12791>
- Wahyoedi, S., Suherlan, S., Rijal, S., Azzaakiyyah, H. K., & Ausat, A. M. A. (2023). Implementation of Information Technology in Human Resource Management. *Al-Buhuts*, 19(1), 300–318. <https://doi.org/https://doi.org/10.30603/ab.v19i1.3407>