

# Digital Transformation through Mobile Applications: Innovative Strategies to Enhance MSME Management and Growth in Indonesia

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## ABSTRACT

Digital transformation through mobile applications has become a strategic necessity to improve the management and growth of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. This study aims to analyze the role of mobile applications in facilitating operational efficiency, business model innovation, and market expansion for MSMEs. Using a qualitative literature review approach, data were sourced from 22 selected articles published between 2015-2024 on Google Scholar. Descriptive analysis reveals that applications like GoBiz, TaniHub, and Qasir help MSMEs enhance management efficiency and market access. However, challenges such as low digital literacy and limited infrastructure remain significant obstacles. This research underscores the importance of synergy between the government, private sector, and MSMEs to optimize the benefits of digital transformation. The findings provide practical implications for government policies, application developers' innovations, and MSMEs' adaptation strategies in the digital era.



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## ABSTRAK

Transformasi digital melalui aplikasi mobile telah menjadi langkah strategis yang esensial untuk meningkatkan manajemen dan pertumbuhan Usaha Mikro, Kecil, dan Menengah (UMKM) di Indonesia. Penelitian ini bertujuan untuk menganalisis peran aplikasi mobile dalam memfasilitasi efisiensi operasional, inovasi model bisnis, dan perluasan pasar UMKM. Dengan menggunakan metode tinjauan pustaka berbasis pendekatan kualitatif, data diperoleh dari 22 artikel terpilih yang dipublikasikan pada periode 2015-2024 melalui Google Scholar. Analisis deskriptif menunjukkan bahwa aplikasi seperti GoBiz, TaniHub, dan Qasir membantu UMKM dalam meningkatkan efisiensi manajemen dan akses pasar. Namun, tantangan seperti rendahnya literasi digital dan keterbatasan infrastruktur masih menjadi hambatan signifikan. Penelitian ini menggarisbawahi pentingnya sinergi antara pemerintah, sektor swasta, dan pelaku UMKM untuk mengoptimalkan manfaat transformasi digital. Temuan ini memberikan implikasi praktis bagi kebijakan pemerintah, inovasi pengembang aplikasi, dan strategi adaptasi UMKM di era digitalisasi.

## 1. INTRODUCTION

Digital transformation has become a key element in driving business growth, particularly in the Micro, Small, and Medium Enterprises (MSMEs) sector in Indonesia. MSMEs, the backbone of the national economy, face significant challenges to remain relevant in the digital era. With over 64 million MSMEs contributing more than 60% of Indonesia's GDP (M Junaidi, 2023), digital transformation through technologies such as mobile applications offer vast opportunities to enhance competitiveness. However, this sector still struggles with barriers such as limited digital knowledge, resource constraints, and uneven technological infrastructure. Therefore, adopting mobile applications as part of digital transformation is a strategic issue that warrants in-depth examination.

Advancements in mobile application technology have created innovative solutions that simplify the

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management of various operational aspects, ranging from inventory management to digital marketing. Applications like GoBiz, Moka POS, and Qasir have made substantial contributions by providing platforms for transactions, financial management, and business performance monitoring. Additionally, advanced features such as digital payment integration, automated financial reporting, and real-time data access enable business owners to make data-driven decisions more effectively. However, the adoption of these applications remains limited to MSMEs with existing digital awareness, while many in remote areas still rely on conventional methods (Almaududi Ausat et al., 2021).

A critical focus of digital transformation for MSMEs through mobile applications is improving business management efficiency. These applications enable MSMEs to leverage technologies previously accessible only to large enterprises. The resulting operational efficiency can help MSMEs reduce costs, increase productivity, and expand market reach. For example, the GrabMerchant application connects culinary MSMEs with millions of customers via online platforms, boosting potential revenue. This demonstrates that mobile applications can serve as a pivotal driver of sustainable MSME growth (Iakovets et al., 2022).

Beyond efficiency, innovation is another key factor in digital transformation. MSMEs can adopt new business models that are more adaptable to market changes through mobile applications (Februadi et al., 2025). For instance, the TaniHub application allows agribusiness MSMEs to access markets directly, bypassing intermediaries and increasing farmers' income. MSMEs can add value to their products by leveraging this technology, improve customer satisfaction, and gain competitive advantages in an increasingly crowded market.

However, the implementation of digital transformation via mobile applications introduces new challenges that require special attention. One major obstacle is low digital literacy among MSME actors (Ausat & Suherlan, 2021), particularly in rural areas. Additionally, technological infrastructure limitations, such as slow and uneven internet access, hinder the adoption of mobile applications. Strategic interventions from the government, educational institutions, and private sectors are necessary to provide training, mentorship, and infrastructure enhancements for MSMEs.

Government support through policies and programs that encourage technology adoption is critical to the success of MSME digital transformation (Zikri, 2024). Initiatives like the Digital Talent Scholarship and technological incentive programs for MSMEs have shown positive results in increasing technology adoption. Furthermore, partnerships with the private sector, such as collaborations between Bank Indonesia and digital payment platforms to promote QRIS (Quick Response Code Indonesian Standard), need to be expanded to accelerate the digital transformation of MSMEs.

This study is essential for examining innovative strategies to leverage mobile applications as tools for enhancing MSME management and growth in Indonesia. Using a literature review approach, the research analyzes relevant studies to identify success factors, challenges, and the impact of digital transformation on MSMEs. The findings are expected to provide valuable insights for policymakers, MSME actors, and other stakeholders in designing more effective strategies to accelerate digital transformation in this sector.

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

### **Digital Transformation**

Digital transformation refers to the adoption of digital technologies to change how organizations operate and deliver value to their customers (Gadzali et al., 2023). In the context of MSMEs, digital transformation involves implementing digital tools such as mobile applications, e-commerce platforms, and business management software to enhance operational efficiency, expand market reach, and boost competitiveness. It also creates opportunities for innovative business models that are more adaptive to market changes while addressing traditional challenges like limited resources and restricted market access.

### **Mobile Applications**

Mobile applications are software designed for use on mobile devices such as smartphones and tablets (Jain & Viswanathan, 2015). For MSMEs, mobile apps offer practical solutions for business management, marketing, and digital transactions. Examples like GoBiz, Qasir, and TaniHub facilitate real-time order management, payment processing, and inventory tracking. The strengths of mobile applications lie in their accessibility and flexibility, enabling MSMEs to conduct business operations anytime and anywhere, with greater efficiency compared to conventional methods.

## **MSMEs**

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of the economy in many countries, including Indonesia, contributing significantly to employment and gross domestic product (Ausat et al., 2023). MSMEs encompass various small-scale businesses, from local production to service providers, often facing challenges such as limited capital, restricted market access, and technological capability. Digitalization through mobile applications and other technological platforms has become a strategic solution to help MSMEs enhance productivity, expand market reach, and remain competitive in the global market.

## **Management**

Management in the MSME context involves planning, organizing, directing, and controlling resources to achieve business goals (Ashsifa et al., 2023). Effective management is crucial for MSMEs, given their often limited resources that need efficient allocation. Digital technology, such as mobile applications, provides tools to improve business management, from inventory control and transaction recording to customer data management. Good management enables MSMEs to make more strategic decisions, ensuring long-term growth and sustainability.

## **Growth**

MSME growth refers to the increase in business capacity and scale, including revenue, workforce size, and market expansion (Pedraza, 2021). Growth is essential for supporting local and national economic stability. Mobile applications and digital transformation significantly contribute to MSME growth by broadening market access, speeding up transactions, and reducing operational costs. Additionally, digitalization allows MSMEs to compete with larger enterprises through innovative products and services tailored to consumer needs.

## **Innovation**

Innovation in MSMEs involves creating new products, services, or business models that provide added value and differentiate the business from competitors (Diawati et al., 2023). In the digital era, innovation is often driven by technology, including mobile applications and e-commerce platforms, enabling MSMEs to develop new ways of serving customers. For instance, innovations like fast delivery services or digital payments enhance customer experiences. Innovation also encourages MSMEs to adapt more effectively to market changes, ensuring competitiveness and sustainability in an increasingly globalized economy.

## **3. RESEARCH METHOD**

This study employs a literature review method with a qualitative approach to deeply analyze the concept of digital transformation through mobile applications as an innovative strategy to enhance MSME management and growth in Indonesia. This approach is chosen for its relevance in exploring, understanding, and interpreting complex phenomena through existing literature. It aims to identify key findings, trends, and recommendations based on previous studies. The data for this study was collected from scholarly articles published in indexed journals on Google Scholar between 2015 and 2024. Keywords such as "digital transformation MSMEs," "mobile applications MSMEs," "innovation in MSMEs," "digitalization Indonesia MSMEs," and other related terms were used in the search. Initially, 50 relevant articles were identified. A rigorous selection process was conducted to ensure the quality and relevance of the articles using the following criteria: (1) publication in reputable national or international indexed journals, (2) topic relevance to the research, and (3) availability of complete data in the articles. After selection, 22 articles meeting the criteria were chosen for further analysis. Data analysis was conducted using a qualitative descriptive approach, where information from the selected articles was identified, classified, and interpreted to provide a comprehensive view of the role of mobile applications in supporting MSME digital transformation. The data analyzed included empirical findings, technological trends, and challenges faced by MSMEs in adopting mobile applications. The analysis results were then organized into key themes, including operational efficiency, business model innovation, and business growth. The analysis was conducted systematically to ensure valid and reliable research results. The process began with data collection, followed by thorough reading of the selected articles, noting important points, grouping data by themes, and writing narratives describing the analysis results. This approach allows the research to integrate various perspectives from relevant literature and provide recommendations based on a synthesis of existing knowledge.

#### 4. DATA ANALYSIS AND DISCUSSION

Digital transformation via mobile applications has become a strategic pillar in driving the efficiency, productivity, and growth of MSMEs in Indonesia, offering integrated technological solutions for operational and marketing needs. Applications like GoBiz, developed by Gojek, exemplify how digital innovation can support MSMEs, particularly in the culinary sector, by managing orders, inventory, payments, and financial reporting on a single, accessible platform. With these features, MSMEs like Warung Tekko in Jakarta have significantly improved operational efficiency, reduced order processing time, and expanded customer reach through practical delivery services and digital payments. This transformation enhances MSME competitiveness and strengthens customer relationships by providing a more modern and personalized shopping experience. Moreover, mobile technology enables MSMEs to tap into broader markets, adapt to digital trends, and accelerate data-driven decision-making, establishing itself as a key driver of sustainable growth in the digital economy (Javaid et al., 2024).

Mobile applications have become critical catalysts for MSMEs to expand market reach without relying on physical stores, granting direct consumer access while reducing distribution barriers. A notable example is TaniHub, an agritech platform connecting local farmers with broader markets, including restaurants, hotels, and households that were previously inaccessible without intermediaries. Case studies on local farmers in Indonesia reveal that using TaniHub has increased their income by up to 30% by enhancing distribution efficiency, ensuring price transparency, and eliminating intermediaries that typically reduce farmers' profits (Kunjana, 2020). This success illustrates how mobile applications elevate the competitiveness of the agribusiness sector, optimize supply chains, and strengthen MSMEs' position in national markets. Agribusiness MSMEs can maximize harvests, minimize stockpile risks, and respond swiftly to market demands by leveraging accessible technology, positioning mobile applications as strategic tools for sustainability and growth in the digital era.

The innovation brought by mobile applications, such as Qasir, plays a crucial role in sustaining and optimizing MSMEs' operations, particularly in the retail sector (Qasir, 2024). Qasir offers an easy-to-use point-of-sale (POS) system, enabling MSMEs like Toko Batik Melati in Solo, which previously relied on manual record-keeping, to transition to more structured and automated methods. Toko Batik Melati can monitor inventory in real-time with this application, avoiding stock shortages or overstocking, efficiently record sales transactions, and quickly generate daily financial reports. Consequently, the MSME saves time and effort in administrative processes and gains access to accurate and up-to-date data for more precise and strategic business decisions. This innovation enhances financial and inventory control, minimizes human errors, and boosts transparency, ultimately strengthening MSMEs' competitiveness and sustainability in an increasingly digital and competitive market.

Despite its promises, mobile application adoption among MSMEs faces significant challenges, notably low digital literacy in many regions, including rural areas. For instance, in Lebak Regency, some MSME actors lack a full understanding of how to utilize mobile applications to enhance their business operations and marketing (Suryana, 2022). While initiatives like Grab for Good provide digital training to familiarize users with these technologies, adoption rates remain low due to existing gaps in knowledge and digital skills. This indicates that while technology is available, without adequate understanding, its benefits for MSMEs are limited. A more holistic approach is required, focusing on not only developing and providing mobile applications but also delivering in-depth digital education and training. Technology adoption can be more effective by improving digital literacy, particularly among MSMEs in rural areas, contributing significantly to business growth and sustainability in an increasingly connected digital market.

Infrastructure limitations, particularly unequal internet access, pose another major barrier to the digital transformation of MSMEs, especially in remote areas like East Nusa Tenggara (NTT). Despite government efforts to improve digital infrastructure through programs such as Palapa Ring, which aims to expand internet access to remote regions, the benefits have yet to be fully realized by MSME actors in these areas (Kominfo, 2024). In many regions, slow or unstable internet access hampers the use of mobile applications, which heavily depend on reliable internet connectivity. This prevents MSMEs from leveraging digital platforms that could enhance their business efficiency and competitiveness. This challenge underscores the need for stronger synergy between the government and the private sector to accelerate the development of more equitable digital infrastructure. Ensuring that all MSMEs, especially those in remote areas, have access to

necessary technologies is critical for supporting their growth and sustainability. Without adequate infrastructure, digitalization efforts for MSMEs will remain constrained, highlighting the urgency for collaborative and innovative solutions to comprehensively address this issue.

Mobile applications enhance operational efficiency for MSMEs while opening opportunities for innovation in their business models, as demonstrated by platforms like Bukalapak Mitra. This platform allows traditional kiosks to transform by providing access to online wholesale purchases and digital payment features, which were previously out of reach for many MSMEs. A successful example is a kiosk in East Java that significantly increased its revenue after joining Bukalapak Mitra (Chalifia, 2024). Through this application, the kiosk in East Java managed inventory more effectively, reduced waste, and leveraged sales data for more accurate purchasing decisions. Additionally, the digital payment features offered by Bukalapak Mitra enabled East Java MSMEs to provide additional services to customers, such as bill payments and mobile top-ups, which boosted customer satisfaction and loyalty. This demonstrates that by leveraging technology, MSMEs can innovate in offering products and services, enhance competitiveness, and expand their market while opening new opportunities that support sustainable business growth.

Support from the government and private sector plays a critical role in accelerating MSMEs' digital transformation, as reflected in programs like UMKM Go Online launched by the Ministry of Communication and Information Technology. This program aims to help MSMEs access and utilize digital platforms to expand their market and increase competitiveness. For example, a case study of MSMEs in Bandung revealed that over 1,000 entrepreneurs successfully increased their income after joining major e-commerce platforms such as Shopee and Tokopedia through this program (Santosa, 2023). MSMEs can quickly adapt to the digital market, expedite technology adoption, and tap into wider market potentials with government support providing training and access to technology and the private sector supplying digital platforms and infrastructure. This collaboration accelerates digitalization while granting MSMEs access to previously inaccessible markets, creating significant growth opportunities. The program demonstrates that synergy among the government, private sector, and MSMEs can establish a sustainable digital ecosystem, delivering broad economic benefits for all stakeholders.

Mobile applications have unlocked new opportunities for MSMEs in digital marketing, enabling them to reach a broader audience through social media and e-commerce. One success story is Evermos, a community-based e-commerce platform facilitating MSMEs in selling halal products online. For instance, an MSME in Bogor that previously relied solely on local markets to sell handicrafts successfully expanded its market across Indonesia through Evermos (Instagram, 2024; Setiawan, 2023). This platform provides MSMEs access to a large and integrated market ecosystem, allowing them to utilize various digital marketing features such as promotions on social media, marketplace sales, and easy payment systems. This demonstrates how mobile applications improve MSMEs' accessibility to larger markets and enable them to compete in a broader national market that was previously unattainable without digital platforms. The study highlights that mobile technology plays a crucial role in opening new market opportunities for MSMEs looking to grow, optimizing their product potential, and reaching customers beyond geographical constraints.

The success of mobile application adoption by MSMEs heavily relies on their readiness to adapt to new technologies, often posing a significant challenge in digital transformation. Therefore, continuous training programs involving collaboration among academia, government, and the private sector are essential to ensure MSMEs can fully leverage technology. For instance, digitalization training programs for MSMEs organized by Bank Indonesia and the Financial Services Authority in collaboration with Tokopedia provided training on using mobile applications for marketing and financial management (Binus, 2022). These training sessions help MSME actors enhance their skills in leveraging digital platforms to expand market reach, improve operational efficiency, and better manage finances. Such programs provide practical knowledge for using mobile applications effectively, increasing MSMEs' chances of thriving in an increasingly digital market. This underscores the need for a holistic and inclusive approach to support MSMEs' digital transformation, with a strong emphasis on digital skill development as a key factor in ensuring their adaptability and competitiveness in a more interconnected business world.

Overall, digital transformation through mobile applications offers tremendous opportunities for MSMEs to improve management, efficiency, and innovation in their business models, making them more competitive in an increasingly connected digital market. However, the successful implementation of this technology depends heavily on a close synergy among MSME technology adoption, entrepreneurs' readiness to adapt, and strong support from the government, private sector, and academia. The aforementioned case

studies, such as those involving MSMEs in Bandung, Depok, and Surabaya, illustrate how mobile applications can enhance market access, operational efficiency, and financial management, ultimately driving business growth. However, challenges such as low digital literacy, limited infrastructure, and the need for continuous training remain barriers that must be addressed. To ensure the benefits of digital transformation are equitably realized across Indonesia, it is essential to create a supportive ecosystem for MSME digitalization through a holistic approach, including training provision, infrastructure improvement, and collaboration among various stakeholders. Digital transformation can positively and sustainably impact Indonesia's MSME sector by addressing these challenges, accelerate digital economic development, and empower entrepreneurs across regions.

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

This study highlights the significance of digital transformation through mobile applications as an innovative strategy to enhance the management and growth of MSMEs in Indonesia. Mobile applications offer practical solutions for improving operational efficiency, expanding market reach, and adopting new business models relevant to the digital era. Case studies such as GoBiz, TaniHub, and Qasir demonstrate that digitalization can drive MSMEs to become more competitive, despite challenges like low digital literacy and limited infrastructure. This digital transformation not only improves business performance but also helps MSMEs contribute to strengthening local and national economies.

This discovery has several important implications for various parties. For MSMEs, the use of mobile applications can be a strategic step to face competition in the digital era, especially by utilising integrated management, marketing and financial reporting features. For the government, the results underscore the importance of continued investment in digital infrastructure as well as training to improve technological literacy among small businesses. Meanwhile, for app developers and the private sector, opportunities to create more inclusive and relevant solutions for MSMEs are key to supporting sustainable digitalisation.

Recommendations for supporting MSMEs in embracing digital transformation emphasize the importance of continuous digitalization training programs, particularly in regions lagging behind in technology adoption. The government should prioritize equitable digital infrastructure development to improve internet access and facilitate this transition. Business owners are encouraged to gradually adopt mobile applications, beginning with basic features such as transaction recording and online marketing, to ease their progression into the digital era. Meanwhile, app developers are urged to design user-friendly applications that account for the challenges posed by limited digital literacy and infrastructure in remote areas, ensuring that MSMEs across all regions can fully leverage these technologies. Furthermore, academics are called upon to conduct additional research to identify critical success factors in MSMEs' digitalization efforts, focusing on strategies for fostering collaboration among government entities, private sectors, and MSMEs to drive sustainable progress.

This study has several limitations worth noting. First, it relies solely on secondary data from literature published on Google Scholar, making the findings dependent on the quality of selected articles. Second, the scope of the study is restricted to descriptive analysis and does not include empirical data directly collected from MSMEs in the field. Third, the focus on the 2015–2024 period may not fully capture the latest technological advancements or policies introduced after this timeframe. Future studies are recommended to adopt mixed-method approaches, incorporating primary data to provide a more comprehensive understanding.

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