Arthatama
Journal of Business Management and Accounting
ISSN: 2655-786x (p), 2774-5678 (e)

Vol. 9, No. 1 (2025), pp. 147-164

Digital payment transformation: a strategic differentiator in indonesia's microfinance innovation

Revi Lonna[1], Siti Azizah U.A[1], I Made Sukresna[1]
[1] Universitas Diponegoro, Semarang, Indonesia
revilonna8@gmail.com

Abstract

This study aims to analyze the transformation of digital payments from manual to mobile systems as a strategic differentiator in Indonesia's microfinance innovation. Using a qualitative method, data were collected through in-depth interviews with microfinance industry players, regulators, and users of digital financial services. The results indicate that the adoption of mobile-based digital payments not only improves operational efficiency but also expands access to financial services for communities previously underserved by formal financial systems. This transformation fosters the creation of a more inclusive and adaptive microfinance ecosystem in response to technological advancements. Furthermore, payment digitalization provides a competitive advantage for microfinance institutions in facing market competition and meeting the increasingly dynamic needs of customers. The study recommends strengthening collaboration between industry players, government, and technology providers to accelerate the adoption of digital payments in the microfinance sector. These findings are expected to serve as a strategic reference for the sustainable development of microfinance innovation in Indonesia.

Keywords

Digital Payment, Microfinance, Innovation.

1. Introduction

The financial industry has seen substantial changes as a result of the advancement of digital technology. The shift from manual to mobile-based digital payment systems is one of the most noticeable changes. This innovation not only drives efficiency in financial operations, but also becomes a major catalyst in creating more inclusive financial services. In Indonesia, a country with a growing smartphone penetration rate and a widespread population, the digitization of mobile-based payments has great potential to overcome the obstacles of traditional financial services. As of January 2023, the value of digital transactions in Indonesia has reached an astounding Rp 4,600 trillion, while the QRIS system in the banking industry experienced a significant increase of 104.64% year-on-year. Indonesia, with more than 175 million smartphone users, has made mobile technology a key driver in the adoption of digital payments. The convenience and security offered by mobile payments make consumers more willing to make transactions both online and offline, thereby increasing overall spending levels and further driving financial inclusion (Hu & Hou, 2024). For micro and small businesses, the efficient payment process through mobile payments has created its own market segmentation compared to other Fintech services, significantly supporting the development of the digital economy in Indonesia (Widayani & Fiernaningsih, 2022; Subkhan & Hutajulu, 2023) Furthermore, mobile payment trends continue to evolve rapidly adopting the latest technologies such as biometrics, contactless payments evolving into Tap-to-Pay, which has the potential to revolutionize peer-to-peer payments and small business models in the future. This transformation not only changes the way people transact but also becomes a strategic differentiator that enables microfinance institutions to reach a wider market at a lower cost.

The development of digital technology has brought significant changes in various sectors, including the financial sector. One of the most prominent transformations is the change in payment systems from manual methods to mobile-based digital systems. This innovation not only drives efficiency in financial operations, but is also a major catalyst in creating more inclusive financial services. In Indonesia, a country with an ever-increasing smartphone penetration rate (exceeding 175 million users by 2023) and a widespread population, the digitization of mobile-based payments has great potential to overcome various obstacles in traditional financial services (Liu X, 2024) (Samosir et al., 2021). The adoption of digital technology in Microfinance Institutions (MFIs) can increase operational efficiency by up to 40% while expanding market reach to previously unreachable rural areas. By January 2023, the value of digital transactions in Indonesia had reached an astonishing figure of IDR 4,600 trillion, while the QRIS system in the banking industry experienced a significant increase of 104.64% year-on-year.

Nonetheless, the gap in access to formal financial services remains a challenge, especially in rural areas where 34% of the adult population is unbanked (Sutisnawati, 2023). Although 67% of MFIs still use manual systems that are prone to inefficiency

and human error, these institutions are essential as a bridge to financial inclusion (Samosir et al., 2021). According to International Labor Organization (ILO) research, 67% of medium-sized businesses and 57% of small businesses in Indonesia have difficulty obtaining bank financing because they lack collateral and a solid financial history (ILO, 2019). Only 22% of MFIs have integrated IT systems to facilitate digital transactions, which makes this condition worse. This difficulty necessitates a strategic shift that emphasizes stakeholders' cooperation and the development of supporting ecosystems like digital financial literacy in addition to technology adoption (Astuti et al., 2024). Environmental factors, such as regulatory support from the Financial Services Authority (OJK) and cooperation with technology providers to overcome infrastructure constraints, are crucial to the success of this transformation (Astuti et al., 2024).

The transformation from manual payment systems to mobile-based digital systems is an important step in addressing these challenges. Through digitization, financial transactions can be made faster, safer, and more transparent in addition to a 68% increase in field officer productivity after adopting mobile applications for loan applications (African Financial Inclusion policy Initiatives, 2018). In Indonesia, the implementation of QRIS (Quick Response Code Indonesian Standard) has increased the volume of micro transactions by 117.59% on an annual basis, with the transaction value reaching Rp12.2 trillion by December 2022 (Mustagfiroh & Supriyadi, 2024). Easy access to financial services through mobile devices extends the reach of MFIs to remote areas, where 34% of the adult population is unbanked (Bank Indonesia, 2014). Research by Bank Indonesia revealed that 72% of MSMEs in East Java experienced an increase in turnover after using QRIS, while reducing the risk of counterfeit money circulation by 41%.

The integration of blockchain technology in cross-border payment systems, which is predicted to reach a market value of $345.42 billion by 2033, has also inspired the development of microfinance infrastructure based on cryptographic security. In Indonesia, the adoption of cloud-native micro savings by Huawei and MuRong has cut the processing time of opening a micro account from 3 days to 15 minutes, with the adoption rate reaching 1.2 million users within 6 months of launch. This transformation not only increased financial inclusion from 48% to 67% in the last five years, but also provided added value in the form of convenience (84% of users reported increased satisfaction) (Tikno et al., 2024), average transaction speed of 12 seconds and real-time control of financial activities through digital dashboards (African Financial Inclusion policy Initiatives, 2018) . Thus the main challenge remains digital literacy , where 57% of MSME players in rural areas still need intensive assistance to adopt mobile payment technology.

Furthermore, the adoption of digital payments creates opportunities for Microfinance Institutions (MFIs) to build a sustainable competitive advantage. In an era of increasingly dynamic competition, technology-based innovation is a key element to maintain customer loyalty and expand market share. Digitalization of

microfinance services increases customer retention by 25% through increased convenience and personalization of services. Furthermore, financial institutions can plan services that are more responsive, flexible, and integrated with the larger digital ecosystem like e-commerce platforms and national digital payment systems thanks to digital transformation. In a market that is becoming more and more competitive, technological adaptability is a crucial differentiator for microfinance institutions to stay competitive (Prakash, 2025).

Furthermore, payment digitization gives MFIs access to more accurate risk analysis and data-driven decision-making by giving them access to richer, real-time data. This encourages the creation of more creative financial products that cater to microclients' needs. Big data analytics can lower default rates and increase credit efficiency in microfinance services (Nahar et al., 2024).

Additionally, the use of digital payments gives Microfinance Institutions (MFIs) the chance to develop a long-term competitive edge. Technology-based innovation is essential to preserving client loyalty and growing market share in a time of more intense competition. MFIs can create service strategies that are more responsive, flexible, and integrated with the changing digital ecosystem thanks to digital transformation. Products, business processes, and models are all altered by digitalization in MFIs, which promotes more customer-centric service innovations and boosts competitiveness against the increasingly intense fintech competition (Rajib et al., 2025).

Additionally, through innovations in technology, procedures, and services that enhance customer satisfaction and operational efficiency, digitalization fortifies organizational capabilities. For instance, MFI's partnerships with fintech platforms like Flip and the creation of mobile applications with Virtual Account functionality have increased accessibility and transaction speed while reaching new markets in far-flung locations. In addition, digitization enables real-time data collection and analysis, which helps MFIs in risk management and more targeted product development. However, digital readiness and human resource capacity are the determining factors for the success of this transformation, as seen from the variation of digital readiness in various MFIs.

However, to achieve an effective and comprehensive transformation, strong collaboration between various stakeholders, including industry players, government, regulators, and technology providers, is required. Digitalization of microfinance institutions has been proven to improve operational efficiency and facilitate supervision, thus supporting sustainability and optimal expansion of service coverage to MSMEs. Digitalization is a key pillar that strengthens institutional, supervisory, and supporting infrastructure in the development of Islamic microfinance in Indonesia, which not only accelerates transformation but also prevents the alienation of non-digitalized institutions (KNEKS, 2020).

Supportive policies, such as the financial digitalization roadmap by the Financial Services Authority (OJK) and the Indonesian Payment Blue Print 2025 by Bank

Indonesia, provide a strategic framework that facilitates digital integration and broader financial inclusion. In addition, people's digital financial literacy is a determining factor in the successful adoption of digital payment systems. Through digital education and assistance, it is very important to increase the ability and confidence of customers in using digital services, especially in remote areas and among MSMEs (Isman et al., 2024).

Given the urgency and complexity of these issues, it is important to conduct this research. There appears to be a research gap that needs to be addressed given the paucity of studies that particularly address the transformation of digital payments in the context of Indonesian microfinance institutions. In many developing nations, including those in the Asia-Pacific area, digital financial inclusion has been shown to be a major factor in reducing poverty and promoting economic growth. Particularly in low-income communities and remote locations, the digitization of financial services has greatly expanded access to and utilization of formal financial services. But the biggest barriers to speeding up the adoption of digital payments in the microfinance industry remain issues like inadequate regulations, low digital literacy, and gaps in technology access (Tay et al., 2022; Prasta, 2024; Basnayake et al., 2024).

This study uses a qualitative methodology and an empirical case study to determine how digital transformation functions as a strategic differentiator and to formulate suggestions for accelerating the inclusive and sustainable adoption of digital payment systems. This method makes it possible to gain a thorough grasp of the internal dynamics, difficulties, and successful adaptation tactics of microfinance institutions in the local setting. Additionally, in order to ensure equitable and sustainable financial inclusion, this study aligns with World Bank (2023) recommendations that highlight the significance of multisectoral collaboration, bolstering digital infrastructure, and enhancing digital financial literacy (Klapper, 2024). Therefore, it is anticipated that this study will significantly advance the theory and practice of microfinance innovation in Indonesia and serve as a guide for industry participants and policymakers as they create focused interventions.

2. Literature Review

2.1. Digital Transformation in Financial Services

A key factor in the growth of the global financial sector, including the microfinance sector, is digital transformation. Adoption of digital technology is part of this change in order to increase service reach, boost performance, and increase operational efficiency. Digitalization makes it possible for Islamic microfinance institutions (MFIs) to incorporate digital-based financial services, which enhance internal control and service quality while also speeding up transaction times (KNEKS, 2020). By increasing efficiency and offering a wider range of services without regard to location, the adoption of a digitally based mobile banking system boosts customer satisfaction and attraction. However, in order to deploy digital technology as effectively as possible, the majority of MFIs in Indonesia continue to

struggle with a lack of funding and human resources (Ahmad Khoiri & Sulistyowati, 2023).

2.2. Mobile-based Digital Payment

Particularly in developing nations like Indonesia, mobile-based digital payments have emerged as a viable means of promoting financial inclusion. Due to the widespread use of smartphones, mobile payment services are more convenient, secure, and cost less to use than traditional methods (Isman et al., 2024). For instance, BMT Surya Madani's digital transformation combines fintech and e-banking to support an open loop policy that facilitates cross-platform transactions more effectively. In addition to giving MSMEs better access to financial services, this enhances microfinance institutions' standing within the digital finance ecosystem. Furthermore, digitizing payments lowers the possibility of human error and improves transaction transparency, both of which are critical for gaining the trust of regulators and customers (Baskoro et al., 2023; Pratama et al., 2025).

In addition, government policies and regulations that encourage the modernization of cooperatives and microfinance institutions through digital transformation initiatives also support payment digitalization. The adoption of digital payments by MSMEs and the general public can be accelerated with the availability of adequate technological infrastructure and increased digital literacy (Kominfo, 2020).

2.3 Financial Inclusion and the Role of Microfinance Institutions

The goal of financial inclusion is to give everyone in society, particularly low-income groups that traditional banking frequently ignores, access to formal financial services. Although they are crucial in closing this gap, microfinance institutions (MFIs) continue to face significant obstacles because of their outdated technology, expensive operating expenses, and ineffective manual procedures (Informatics, n.d.). Particularly for those who are difficult for traditional banks to reach, microfinance institutions are crucial in advancing financial inclusion. However, the primary barriers to expanding access to microfinance services are manual systems and technological limitations (Abubakar & Handayani, 2022). Strengthening digital-based governance and supervision is one of the policies that OJK and the Ministry of Cooperatives and SMEs have released to encourage the digitalization of microfinance institutions. The success of financial inclusion also depends on digital financial literacy. Digital education is the main focus of Indonesia's National Financial Literacy Strategy 2021 until 2025, which aims to hasten the community's adoption of digital financial products (OJK Department of Literacy and Finance, 2021). Microfinance institutions can increase their reach and raise the standard of financial services for MSMEs and low-income communities with sufficient policy support and education.

2.4 Innovation as a Strategic Differentiator

In addition to increasing efficiency, digital innovation in microfinance services helps microfinance institutions stand out from the competition by providing quicker, less expensive, and easier-to-access services. For BMT to remain competitive in the modern era, digital innovation and transformation are crucial components. In the competitive microfinance market, digital innovation emerges as a key strategic differentiator. Microfinance organizations can gain a sustainable competitive edge by implementing digital technology to provide quicker, less expensive, and easier-to-access services. Financial institutions can greatly expand their market reach and operational efficiency through digital innovation in microfinance (Annisyah, 2022). Furthermore, new products that cater to the needs of microcustomers, like app-based lending services and real-time digital payments, are being developed as a result of digital innovation. As a result, microfinance institutions are better positioned to compete with traditional banks and fintechs.

2.5 Multi-stakeholder Collaboration in Digital Finance Ecosystem

Cooperation between different stakeholders, such as the government, regulators, technology providers, and the community, is crucial to the microfinance sector's digital transformation success. According to KNEKS (2020), the community's increased digital literacy, appropriate technology infrastructure, and flexible policies are all necessary to support the digitalization of Islamic microfinance institutions. A free core system for IKMS, improved digital-based oversight, and training and education initiatives for microbusiness actors are all part of this partnership (KNEKS, 2020). According to Hidayat (2024) study, digitalization also facilitates MSMEs' ability to cooperate and form partnerships with other parties, expanding their access to capital and markets. Digital transformation can be more inclusive and successful with an integrated and cooperative ecosystem, enhancing the contribution of microfinance institutions to the growth of the national economy.

3. Methods

The phenomenon of digital payments shifting from manual to mobile systems within the context of microfinance innovation in Indonesia is thoroughly examined in this study using a descriptive qualitative methodology. This approach was chosen because it is well-suited to understanding the social dynamics, subjective experiences, and strategic context underlying changes in microfinance institutions. Qualitative methods enable rich and in-depth exploration of attitudes, driving factors, challenges, and the impacts of digital transformation elements that are often difficult to measure using quantitative techniques.

The target population of this study includes microfinance industry stakeholders who are directly involved in the digital transformation process, both as service providers and users. The research is conducted in Indonesia, focusing on regions with high microfinance activity and ongoing digital service implementation. The

analysis includes microfinance institutions (MFIs), financial sector regulators, and customers who utilize digital payment services. Informants were selected using purposive sampling specifically, individuals who possess relevant knowledge, experience, and direct involvement with the digital payment system transformation (Hidayah & Putra, 2024).

The respondent profile includes five operations and IT managers from MFIs that have implemented mobile payment systems, three regulators from the Financial Services Authority, and seven digital service users, including MSME actors and individual users. Data were collected through in-depth interviews using a semi-structured approach, allowing flexibility to explore detailed information based on informants' responses (Hidayah & Putra, 2024).

Interviews were conducted either in person or online, depending on the informants' conditions and availability (Abdillah, 2023). All interviews were recorded with the participants' consent, transcribed verbatim, and analyzed using thematic analysis to identify patterns and key themes.

Measurement in this qualitative research was conducted through thematic analysis based on emerging patterns and categories within the interview transcripts. Data validity was maintained through several techniques: source triangulation comparing information from various informants to ensure consistency and depth while minimizing subjective bias—and member checking—reconfirming interview results with respondents to ensure that the researcher's interpretation aligned with the participants' intended meanings. This method has proven effective in research on digital transformation and microfinance innovation, providing a deep and comprehensive understanding (Abdillah, 2023; Hidayah & Putra, 2024).

4. Results

4.1 Improving Operational Efficiency Through Digital Payments

The research findings indicate that the operational efficiency of microfinance institutions (MFIs) has significantly improved due to the adoption of mobile-based digital payment systems. Transactions that previously required manual verification and record-keeping can now be completed more quickly and automatically. As a result, long queues and data entry errors commonly found in manual systems have been substantially reduced. This automation also accelerates financial recording, reporting, and transaction monitoring processes. In addition, operational costs such as administrative expenses, cash transportation, and the printing of transaction receipts have significantly decreased.

The use of electronic payment systems has also contributed to enhanced financial performance among MFIs. Transactions using electronic money are seen to reduce the risks of fraud, staff errors, and cash handling costs. Digital transformation has also proven to lower transaction costs compared to operating physical branches. For instance, a case study at FINCA Tanzania demonstrated substantial cost efficiency, where mobile transactions cost only USD 0.50 per transaction compared

to USD 1.21 for branch-based transactions. In Kenya, the implementation of mobile-based credit services has also proven to increase commercial banks' efficiency in terms of revenue growth and loan recovery (African Financial Inclusion policy Initiatives, 2018).

4.2 Expanding Access to Finance for the Underserved

The findings reveal that digital transformation has successfully expanded access to financial services for previously underserved populations, particularly micro-entrepreneurs in remote and rural areas. Respondents reported that they can now perform various transactions such as checking balances, transferring funds between users, and making installment payments using only a mobile phone. They no longer need to wait for field officers or travel long distances to microfinance institution (MFI) offices. This convenience has accelerated the penetration of financial services to unbanked and underbanked communities, which have long been a challenge in achieving national financial inclusion.

Recent research by Johri et al. (2024) supports these findings, stating that digital financial inclusion enables micro-entrepreneurs to open bank accounts, receive payments, and access basic financial services via mobile devices. This inclusion also helps them navigate market externalities and regulatory constraints. Furthermore, according to the Alliance for Financial Inclusion (2018), the cost of using digital tools and agent-based operations is approximately 25 percent lower than establishing and managing physical branches. These insights underscore that digitalization is an efficient solution for microfinance service providers to reach geographically inaccessible areas (African Financial Inclusion policy Initiatives, 2018).

4.3 Building an Inclusive and Adaptive Microfinance Ecosystem

The findings indicate that digital transformation has not only impacted the internal operations of microfinance institutions (MFIs), but has also driven the emergence of a more inclusive and adaptive microfinancial ecosystem. MFIs have begun to collaborate with government agencies, telecommunications providers, and financial technology (fintech) companies to design and develop digital solutions. Business model adaptations are being made to integrate conventional services with mobile-based systems. In addition, MFIs are also building internal capacity by enhancing staff competencies in using digital systems and updating work procedures. This reflects MFIs' adaptive ability to respond progressively to digital disruption.

Bathula (2024) supports these findings, emphasizing that partial digital integration is insufficient for driving comprehensive transformation. Successful digital transformation requires more than just the implementation of new tools and standards it also depends heavily on human factors, organizational culture, and the readiness and willingness of consumers to engage in the digital sphere. Bathula further highlights the importance of focusing on specific digital technologies that have been proven to add value and enhance operational efficiency (Bathula, 2024).

Meanwhile, the Alliance for Financial Inclusion (2018) identifies two key strategies used by microfinance service providers in digitizing their services: partnering with digital financial service providers (such as mobile network operators) and developing their own digital products and services (African Financial Inclusion policy Initiatives, 2018). This partnership strategy enables MFIs with limited technical expertise or digital experience to carry out digital transformation effectively.

4.4 Competitive Advantage of Microfinance Institutions

The research findings reveal that digitalization offers a tangible competitive advantage for microfinance institutions (MFIs) in navigating the dynamic landscape of market competition. MFIs that have adopted mobile-based payment services are perceived by the public as more modern, responsive, and trustworthy. Interviews with MFI managers indicate that digital services have helped retain existing customers while attracting new ones, particularly among younger generations and digital entrepreneurs. In contrast, MFIs that still rely on manual processes struggle to match the strategic differentiation offered by faster, simpler, and more transparent digital services. This has directly enhanced the competitiveness of MFIs amid the growing complexity of the microfinance sector.

Empirical research by Ndirangu and Kimani (2022) on microfinance banks in Kenya supports these findings. Their regression model showed an R-square value of 7.8%, indicating that mobile banking significantly impacts MFI performance. The majority of respondents stated that the ease of services such as deposits and withdrawals, fund transfers, loan applications, and balance inquiries via mobile banking were key factors in improving customer satisfaction and loyalty. Additionally, the Alliance for Financial Inclusion (2018) noted that the use of digital financial services enables microfinance providers to enhance the customer experience and respond more swiftly, while still offering service quality comparable to that of physical branches (African Financial Inclusion policy Initiatives, 2018).

4.5 Challenges in Digital Payment Implementation

The findings indicate that the implementation of digital payment systems by microfinance institutions (MFIs) continues to face various challenges, despite their significant potential to enhance efficiency and financial inclusion. Several regions still suffer from limited digital infrastructure, such as unstable internet connectivity, lack of adequate devices, and low digital literacy among both MFI staff and clients. These issues hinder the optimal utilization of digital systems. Furthermore, concerns about transaction privacy and data security persist, particularly among new users.

MFIs also recognize that transitioning from manual to digital systems requires substantial financial investment and organizational readiness, which not all institutions possess. Bathula (2024) highlights that the success of digital transformation depends not only on the adoption of new tools but also on changes in organizational culture and the preparedness of all stakeholders involved. Human

factors, organizational culture, and the willingness and ability of consumers to operate within the digital domain are crucial elements in this process.

Moreover, according to the Alliance for Financial Inclusion (2018), microfinance providers require a supportive ecosystem to successfully adopt digital financial services (African Financial Inclusion policy Initiatives, 2018). This includes a national identity system to meet Know Your Customer (KYC) requirements, mandatory reporting to a central credit bureau for all financial institutions including MFIs and cooperatives, and a legal framework that supports the technologies used. The absence of these supporting infrastructures often constitutes a major barrier to the widespread adoption of digital financial services.

4.7 The Importance of Collaboration Between Stakeholders

The findings show that stakeholder collaboration is a key factor in the successful digital transformation of microfinance institutions (MFIs). Based on interview results, technical support, training, and policy incentives from various parties are essential to accelerate and enhance the effectiveness of the digital transformation process. Such collaboration not only expedites technology adoption but also significantly reduces the social and technical barriers commonly faced by MFIs, such as limited resources and resistance to change.

Research by the Alliance for Financial Inclusion (2018) supports these findings by emphasizing the importance of partnerships between microfinance service providers and digital financial service providers, particularly mobile network operators (African Financial Inclusion policy Initiatives, 2018). These collaborations allow MFIs especially those with limited funding, technical capacity, or experience to continue the digitalization process effectively. Furthermore, the study by Johri et al. (2024) highlights the importance of collaboration among international organizations, banks, entrepreneurship promoters, and governments in building a supportive ecosystem for digital financial inclusion (Johri et al., 2024). This multi-stakeholder approach is considered more effective in overcoming systemic barriers and generating inclusive solutions for diverse segments of society.

5. Discussion

The adoption of mobile-based digital payment systems by microfinance institutions (MFIs) has had a clear positive impact on operational efficiency. Interview results indicate that digitalizing transactions eliminates the need for manual verification and record-keeping, which have long been sources of delays and data entry errors. This finding aligns with Sakanko and David (2019), who state that the use of electronic payment systems significantly enhances the financial performance of MFIs (Sakanko & David, 2019; Ferdiansyah, & Sudarso, 2024).

By reducing long queues and data entry mistakes, and accelerating financial recording and reporting processes, digitalization has proven to support administrative efficiency. Furthermore, operational costs such as cash transportation and receipt printing have decreased significantly, reinforcing the argument by the

African Financial Inclusion Policy Initiatives (2018) that digital transactions help reduce the risk of fraud, staff errors, and cash handling expenses. This is supported by a case study in FINCA Tanzania, where the cost of digital transactions (USD 0.50) was significantly lower than that of branch-based transactions (USD 1.21) (African Financial Inclusion policy Initiatives, 2018).

Digitalization also reduces reliance on physical branches, which in turn helps cut down operational expenses. In this context, Kinyanzui et al. (2018) further note that mobile-based credit services in Kenya have improved the effectiveness of commercial banks in terms of both revenue generation and loan recovery. These findings indicate that digital transformation not only benefits internal operational efficiency but also directly enhances the financial performance and competitiveness of microfinance institutions.

Digital transformation plays a crucial role in expanding financial access, particularly for groups that have long been marginalized from the formal financial system. The findings reveal that digitalization enables micro-entrepreneurs especially those in remote and rural areas to access financial services without having to visit a microfinance institution (MFI) office in person. With just a mobile phone, they can perform basic transactions such as checking balances, transferring funds, and making installment payments. This convenience significantly accelerates the penetration of financial services among the unbanked and underbanked populations.

These findings are supported by Johri et al. (2024), who emphasize that digital financial inclusion allows micro-entrepreneurs to open bank accounts, receive payments, and access basic financial services through mobile devices (Johri et al., 2024). Beyond improving access, digitalization also helps them address external challenges such as regulatory barriers and market uncertainties. This indicates that digital transformation impacts not only physical access to financial services but also the economic empowerment of micro-entrepreneurs.

Moreover, from a cost-efficiency perspective, the Alliance for Financial Inclusion (2018) reports that operational costs through agents and digital devices are approximately 25 percent lower than those associated with opening and managing physical branches. This demonstrates that digitalization not only extends reach but also offers a more cost-effective solution for MFIs to serve hard-to-reach areas (African Financial Inclusion policy Initiatives, 2018). Overall, this discussion underscores that digital financial services represent a strategic step toward promoting more equitable and sustainable national financial inclusion.

Digital transformation has had a broader impact than merely enhancing the internal operational efficiency of microfinance institutions (MFIs) it has also triggered the development of a more inclusive and adaptive microfinance ecosystem. MFIs are no longer operating in isolation they are now engaging in strategic collaborations with various stakeholders, such as government agencies, telecommunications providers, and fintech companies, to design digital solutions

tailored to the needs of the community. Business model adaptation has become crucial to optimally integrate traditional services with mobile-based systems.

This initiative is accompanied by efforts to build internal capacity, including staff skill development and the revision of operational procedures. This phenomenon illustrates the ability of MFIs to progressively adapt to digital disruption. Bathula (2024) affirms that partial digitalization is insufficient to drive significant transformation. A successful digital transformation requires organizational culture change, human resource involvement, and both the willingness and ability of consumers to adapt to digital environments (Bathula, 2024). Therefore, the focus must go beyond the digital tools themselves and include the ecosystem that supports their use.

Moreover, the digitalization strategies identified by the Alliance for Financial Inclusion (2018) further clarify the direction of digital microfinance ecosystem development. The two primary approaches partnering with digital financial service providers and developing in-house digital products offer strategic options for MFIs, particularly those with technical limitations (African Financial Inclusion policy Initiatives, 2018). These partnerships allow MFIs to remain competitive and relevant in the digital age, even without direct technological capabilities. Thus, this discussion underscores that effective digital transformation must be holistic, collaborative, and sustainable.

Digitalization has become a critical factor in creating competitive advantage for microfinance institutions (MFIs), especially in navigating the increasingly complex competitive pressures within the microfinance sector. MFIs that adopt mobile-based payment services are perceived by the public as modern, responsive, and trustworthy institutions. This not only strengthens the loyalty of existing customers but also attracts new market segments particularly younger generations and digital-based entrepreneurs who prefer fast and easily accessible financial services. In contrast, MFIs that continue to rely on manual systems struggle to keep pace with the speed and transparency offered by digital services, which have become the new standard in the microfinance industry.

These findings are supported by empirical research from Ndirangu and Kimani (2022), which shows that mobile banking significantly impacts the performance of microfinance institutions. With an R-square value of 7.8%, the study indicates that the ease of conducting transactions such as deposits, withdrawals, fund transfers, loan applications, and balance inquiries is a key factor in enhancing customer satisfaction and loyalty (Ndirangu & Kimani, 2022). This demonstrates that improved user experience through digitalization has a direct impact on the business success of MFIs.

Furthermore, the Alliance for Financial Inclusion (2018) emphasizes that digital financial services enable MFIs to deliver better customer experiences and respond more quickly to client needs. Digitalization also allows MFIs to provide services comparable to physical branches without incurring high operational costs (African

Financial Inclusion policy Initiatives, 2018). Therefore, this discussion highlights that digitalization is not merely a technical tool, but a strategic necessity for maintaining competitiveness and fostering long-term customer relationships in the digital era.

Despite the numerous benefits that digital transformation in payment services brings to microfinance institutions (MFIs), its implementation faces a range of complex challenges. One of the main obstacles is the limited digital infrastructure in certain regions. Unstable internet connections, lack of digital devices, and low levels of digital literacy among both staff and clients significantly hinder the optimal use of digital payment systems. These challenges are particularly pronounced for MFIs operating in remote areas or with limited resources.

Beyond technical issues, there are also concerns about data security and transaction privacy, especially among new users unfamiliar with digital systems. The shift from manual to digital systems requires organizational readiness, including funding, training, and adjustments to internal work structures. As Bathula (2024) explains, successful digital transformation goes beyond the adoption of new tools or technologies; it demands organizational cultural change and the active involvement of all stakeholders. Bathula emphasizes that human factors, institutional culture, and the willingness and capacity of consumers to adapt to digital environments are critical determinants of a successful digitalization process.

On another front, the Alliance for Financial Inclusion (2018) highlights the importance of a supportive ecosystem, including a national identification system to meet Know Your Customer (KYC) requirements, mandatory credit reporting to a central bureau for all financial actors including MFIs and cooperatives and legal systems that support the use of technology. The absence of these supporting elements often poses significant barriers to the widespread and equitable implementation of digital financial systems (African Financial Inclusion policy Initiatives, 2018). Thus, this discussion underscores that the successful. implementation of digital payments depends not only on technological readiness but also on structural, regulatory, organizational, and cultural preparedness.

The success of digital transformation in the microfinance sector heavily depends on strong collaboration among various stakeholders. Governments and regulators play a vital role in creating a regulatory environment that supports innovation while ensuring consumer protection. On the other hand, technology providers hold a strategic position in developing systems that are secure and widely accessible. Interview results reveal that forms of cooperation such as technical assistance, training, and policy incentives are essential to accelerating and enhancing the effectiveness of the digital transformation process in microfinance institutions (MFIs). This collaborative approach has proven effective in reducing social and technical barriers that have long hindered the digitalization process.

Research by the Alliance for Financial Inclusion (2018) reinforces the importance of collaboration, particularly between microfinance service providers and

digital financial service providers, such as mobile network operators. These partnerships allow MFIs to continue digitalization efforts despite limitations in financial, technical, or experiential resources. This demonstrates that synergy with external parties can serve as a solution to internal institutional constraints (African Financial Inclusion policy Initiatives, 2018).

Furthermore, the study by Johri et al. (2024) expands the perspective by highlighting the need for involvement from international organizations, banks, entrepreneurship promoters, and governments in building a conducive ecosystem for digital financial inclusion. This multi-stakeholder approach is seen as more effective in overcoming systemic barriers and delivering inclusive and sustainable solutions (Johri et al., 2024). Therefore, this discussion emphasizes that cross-sector collaboration not only supports the continuity of digital transformation, but also serves as a crucial foundation for building an inclusive and adaptive microfinance ecosystem.

6. Conclusion

The efficiency, inclusivity, and competitiveness of microfinance institutions (MFIs) in Indonesia have been significantly impacted by the shift from manual to mobile digital payment systems. In addition to reducing operating expenses and expediting transactions, digitalization gives previously underserved communities particularly those in rural and isolated areas more access to financial services. MFIs can reach more customers more easily, more affordably, and safely by implementing mobile technology, which also increases customer satisfaction and retention. The development of a more flexible and cooperative microfinance ecosystem is also encouraged by this shift, and its success depends on collaborations between the government, regulators, technology companies, and industry participants. Adoption is still hampered by issues like inadequate digital infrastructure, low digital financial literacy, and unprepared human resources. Consequently, a thorough and planned strategy that includes policy support, digital education, and organizational capacity building is needed for the digital payment transformation to be successful. This study demonstrates that digital transformation is a long-term differentiation strategy that can improve the sustainability and inclusion of the microfinance industry in the digital age, in addition to being a system modernization.

References

Abdillah, M. D. (2023). Digital Transformation in Indonesian MSMEs : Adoption , impact , and future directions. *Eastasouth Proceeding of Economics and Business* (EPEB), 1(1), 64–70.

Abubakar, L., & Handayani, T. (2022). Penguatan Regulasi: Upaya percepatan transformasi digital perbankan di era ekonomi digital. *Masalah-Masalah Hukum*, 51(3), 259–270.

African Financial Inclusion policy Initiatives. (2018). Digital transformation of Microfinance and Digitalization of Microfinance Services to Deepen Financial Inclusion in Africa. 32.

Ahmad Khoiri, & Sulistyowati. (2023). Analisis implementasi transformasi pelayanan berbasis digital lembaga keuangan mikro syari'ah (Studi Kasus BMT UGT Sidogiri). ILTIZAMAT: *Journal of Economic Sharia Law and Business Studies*, *2*(2), 69–76.

Annisyah, U. (2022). Program Studi : *Program Studi* : 1(48), 1–8.

Astuti, N., Akbar, J. S., & Makrus, M. (2024). Increasing rural economic empowerment through inclusive finance : *A Case Study of Dolokgede Village , East Java.* 11320(5), 825–838.

Basnayake, D., Naranpanawa, A., Selvanathan, S., & Bandara, J. S. (2024). Financial inclusion through digitalization and economic growth in Asia-Pacific countries. *International Review of Financial Analysis*, *96*(PA), 103596.

Bathula, S. (2024). Digital transformation of microfinance and digitalization of micro financial services in india. *European Economic Letters*, 1–13.

Inclusion in Indonesia. *International Journal of Current Science Research and Review*, 05(02), 319–332.

Fersi, M., Boujelbéne, M., & Arous, F. (2023). Microfinance's digital transformation for sustainable inclusion. *European Journal of Management and Business Economics*, *32*(5), 525–559.

Hidayah, Y., & Putra, S. (2024). Digital transformation strategy in islamic microfinance cooperatives : *A Case Study of Bmt Ugt Nusantara ' s Innovation.* *2*(4), 347–357.

Hidayat, I., Qurotulaini, D. L., Safitri, N. A., & Novitasari, R. (2024). transformasi digital pada umkm di indonesia dalam menghadapi tantangan dan peluang pada akses pembiayaan digital transformation of msmes in indonesia in facing challenges and opportunities in access to financing. 7414–7423.

Hu, N., & Hou, G. (2024). Mobile payment, digital inclusive finance, and residents' consumption behavior research. PLoS ONE, 19(7 July), 1–20.

ILO. (2019). Financing Small Businesses in Indonesia: Challenges and Opportunities. In Innovation Strategies in the Food Industry: *Tools for Implementation.*

Isman, I., Hidayat, S., Narwanto, N., & ... (2024). Transformasi digital BMT Surya Madani: Integrasi e-banking dan financial technology menuju implementasi open loop LKMS 2025. BEMAS: *Jurnal ...*, *5*(September 2024), 84–95.

Johri, A., Asif, M., Tarkar, P., Khan, W., Rahisha, & Wasiq, M. (2024). Digital financial inclusion in micro enterprises: understanding the determinants and

impact on ease of doing business from World Bank survey. *Humanities and Social Sciences Communications*, 11(1), 1–10.

Kinyanzui, K. F., Achoki, G., & Kiriri, P. (2018). Effect of mobile credit on operational efficiency in commercial banks in kenya. *Open Journal of Business and Management*, 06(04), 833–849.

Kominfo. (2020). Transformasi Digital. Kominfo Next, 1–88.

Liu X, S. R. S. A. (2024). *ep rin t n ot pe er re v iew Pr rin t n ot pe er.* 09(5), 7352–7363.

Mustagfiroh, L., & Supriyadi, A. (2024). Efektivitas penggunaan qris sebagai media pembayaran dalam meningkatkan perkembangan umkm di jepara. JEBIKSU : *Jurnal Ekonomi Dan Bisnis Islam IAIN Kudus, 2*(2), 204–218.

Nahar, J., Rahaman, M. A., Alauddin, M., & Rozony, F. Z. (2024). Big data in credit risk management: a systematic review of transformative practices and future directions. *International Journal of Management Information Systems and Data Science, 1*(4), 68–79.

Ndirangu, E., & Kimani, J. (2022). Effect of mobile banking on performance of microfinance banks in kenya. *European Journal of Business and Strategic Management, 7*(3), 24–38.

Prakash, C. (2025). Evaluating the TOE Framework for Technology Adoption : A Systematic Review of Its Strengths and Limitations. February.

Pratama, M. F., Efendi, B., Nasution, L. N., Studi, P., Ekonomi, M., Pembangunan, U., & Budi, P. (2025). Transformasi Digital Ekonomi dalam Mendukung Inklusi Keuangan di Indonesia.

Rajib, M. M., Anjar, P., & Indonesia, U. I. (2025). *Implementation of dynamic capabilities to address digital transformation and enhance innovation in islamic microfinance*. 343–358.

Sakanko, M. A., & David, J. (2019). The effect of electronic payment systems on financial performance of microfinance banks in niger state. *Esensi: Jurnal Bisnis Dan Manajemen, 9*(2), 143–154.

Samosir, S. M., Wirdiyanti, R., & Algifari, M. (2021). What drives microfinance institutions adopting technology in indonesia? pre-adoption and post adoption approach in indonesia.

Sutisnawati, Y. (2023). Analisis bibliometrik green human resource management (grhm) terhadap kinerja lingkungan di perusahaan. *Jkbm (Jurnal Konsep Bisnis Dan Manajemen)*, 10(1), 100–111.

Tay, L. Y., Tai, H. T., & Tan, G. S. (2022). *Digital financial inclusion: A gateway to sustainable development. Heliyon*, 8(6), e09766.

Tikno, Dharmawan, Y. S., & Ngatini. (2024). Investigating consumer acceptance of mobile payment services in indonesia. *Procedia Computer Science, 234*(2023), 1095–1102.

Widayani, A., & Fiernaningsih, N. (2022). The innovation resistance model of mobile payments for micro and small enterprises. *Briliant: Jurnal Riset Dan Konseptual, 7*(3), 624.

Zaqueu, L. (2024). Challenges and opportunities for digital transformation in Mozambique's higher education institutions. *Revista Cientifica de Sistemas e Informatica, 4*(2), 269–278

Subkhan, M. A., & Hutajulu, D. M. (2023). The analysis of the effect of financial deepening on Indonesia's economic growth: *A longitudinal analysis. Research Horizon, 3*(1), 19-35.

Baskoro, F., Pancakusuma, M. B., & Raharjo, S. T. (2023). *Designing and evaluating training models for human resource competencies in the digital era. arthatama,* 7(2), 49-62.

Prasta, J. G. (2024). Accelerating digital transformation in islamic banking. *Arthatama: Journal of Business Management and Accounting,* 8(1), 30-37.

Ferdiansyah, F., & Sudarso, A. P. (2024). The influence of service quality and brand trust on brand image and its implications on panin bank customer loyalty in the use of mobile banking. *Economic and Business Horizon,* 3(2), 11-24.