International Journal of Taklimat Science Review

Journal Homepage: https://e-journal-sumatera.com/jurnaltaklimat
ISSN: 3163-950X (Online) / 3163-9453 (Print)

Digital Transformation of Financial Management: Micro-Enterprises' Experience in Adopting Cashless Payment Systems

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Received: 21 May 2026; Revised: 19 Jun 2026; Accepted: 28 Aug 2026

Abstract

This study aims to explore the experiences and dynamics of micro-entrepreneurs in adopting cashless payment systems as part of the digital transformation of financial management. Employing a qualitative approach with a hermeneutic phenomenological design, data were collected through in-depth, semi-structured interviews with micro-entrepreneurs who have integrated QRIS codes or digital wallets into their business operations. The findings indicate that this digital transformation significantly enhances the accountability of automated cash recording and fosters a clear demarcation between personal finances and business capital. However, the sustainability of this adoption is hindered by techno-economic constraints, such as unstable internet connectivity, transaction cost burdens (merchant discount rates), and delays in daily liquidity. Furthermore, a significant digital literacy gap and a cash-based cultural resilience were identified, resulting in technology utilization at the grassroots level remaining superficial. The study concludes that the success of digital financial transformation in the micro-enterprise sector requires stable macro-infrastructure support, affirmative tariff regulations, and financial literacy education that addresses the socio-cultural aspects of the entrepreneurs.

Keywords: Digital Transformation, Financial Management, Micro-enterprises, Cashless Payments.

Abstrak

How to Cite: Goeyardi, G. M., Ashari, C. A., & Sukoco, A. (2026). Digital Transformation of Financial Management: Micro-Enterprises' Experience in Adopting Cashless Payment Systems. International Journal of Taklimat Science Review, 1 (3) 2026, 121-130

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Penelitian ini bertujuan untuk mengeksplorasi pengalaman dan dinamika pelaku usaha mikro dalam mengadopsi sistem pembayaran nontunai sebagai bagian dari transformasi digital pengelolaan keuangan. Dengan menggunakan pendekatan kualitatif berdesain fenomenologi hermeneutik, data dikumpulkan melalui wawancara mendalam dan semi-terstruktur dengan pelaku usaha mikro yang telah mengintegrasikan kode QRIS atau dompet digital ke dalam kegiatan operasional bisnis mereka. Temuan penelitian menunjukkan bahwa transformasi digital ini secara signifikan meningkatkan akuntabilitas pencatatan kas otomatis serta menciptakan pemisahan yang jelas antara keuangan pribadi dan modal usaha. Namun, keberlanjutan adopsi ini terkendala oleh faktor tekno-ekonomi, seperti konektivitas internet yang tidak stabil, beban biaya transaksi (*merchant discount rate*), dan keterlambatan likuiditas harian. Selain itu, teridentifikasi adanya kesenjangan literasi digital yang signifikan serta ketahanan budaya berbasis uang tunai, yang menyebabkan pemanfaatan teknologi di tingkat akar rumput masih bersifat dangkal. Penelitian ini menyimpulkan bahwa keberhasilan transformasi keuangan digital di sektor usaha mikro memerlukan dukungan infrastruktur makro yang stabil, regulasi tarif yang afirmatif, serta edukasi literasi keuangan yang mengakomodasi aspek sosial-budaya para pelaku usaha.

Kata kunci: Transformasi Digital, Pengelolaan Keuangan, Usaha Mikro, Pembayaran Nontunai.

Introduction

Advancements in information and communication technology have brought about fundamental changes in the global economic landscape. Digital transformation is no longer merely an option but an inevitability for all economic actors seeking to ensure the continuity of their business operations (Wahab et al., 2023). In Indonesia, this wave of digitalization is sweeping across the country, influencing how people conduct transactions and manage their financial resources. This shift from conventional to digital patterns demands readiness from business players at all levels, including those at the base of the economic pyramid (Amory & Mudo, 2025).

Micro-enterprises play a crucial role in the national economic structure, both in terms of labor absorption and contribution to the Gross Domestic Product (GDP). Their flexible nature and widespread presence make them a vital economic safety net for the community (Nurhidayanti, 2025). Despite their significant role, this sector often faces perennial limitations, particularly regarding internal management. Traditional and unstructured financial management practices frequently serve as major stumbling blocks that hinder these businesses from scaling up (Gombo et al., 2025).

A key pillar of the ongoing digital transformation drive is the adoption of cashless payment systems (Umam et al., 2026). Various digital payment instruments such as the Quick Response Code Indonesian Standard (QRIS), digital wallets, and electronic bank transfers have been introduced to create a more inclusive transaction ecosystem. For micro-enterprises, these technologies promise operational efficiency, speed, and security benefits that were previously difficult to achieve through cash-based transactions (Supendi et al., 2025).

Adopting cashless payment systems fundamentally alters how financial flows within micro-enterprises are managed. Theoretically, the shift from cash to digital eliminates the physical risk of losing money, reduces the time spent counting change (Sriekaningsih, 2020), and, most importantly, creates an automated record of transactions. This automated record-keeping serves as an initial gateway for micro-enterprises to implement more disciplined and transparent financial governance a practice rarely found in conventional management (Muhammad et al., 2024).

However, the reality on the ground shows that the transition from cash-based to cashless systems does not always proceed smoothly. For micro-entrepreneurs, adopting new technology involves more than just changing payment methods; it requires altering deeply ingrained work habits and cultures (Setiawan & Fitri, 2024). Fears regarding technological complexity, concerns about the security of digital funds, and a heavy reliance on cash for daily working capital create tangible psychological and operational hurdles (Napu & Noe, 2025).

Beyond psychological and behavioral factors, an unprepared supporting ecosystem often complicates the adaptation process. Micro-entrepreneurs frequently cite technical issues such as unstable internet connections, delays in fund disbursement to primary accounts, and administrative fees or Merchant Discount Rates (MDR) that eat into their already slim profit margins. These practical obstacles often foster skepticism among business owners regarding the long-term effectiveness of the digital transformation they are undergoing (Darmansyah et al., 2025; Pratama & Suranto, 2026).

This phenomenon creates a unique dynamic, while there is strong external pressure to digitize the micro-enterprise sector, there are simultaneously limitations regarding the internal capacity of business owners to adopt such technology. The personal experiences of micro-business owners in navigating technical, financial, and cultural obstacles shape a diverse narrative of adoption. It is crucial to gain a deep understanding of how they interpret this transition and the strategies they employ to survive amidst these constraints.

Against this backdrop, this study focuses on exploring the digital transformation of financial management from the perspective of the business owners themselves. The study's significance lies in its aim to capture the objective reality of how cashless systems alter the financial behavior of micro-enterprises and to identify the critical factors determining the success or failure of their digital adaptation. Through a comprehensive understanding, it is hoped that concrete solutions can be formulated to support the sustainability of digital transformation within the micro-enterprise sector.

Research Method

This study employs a qualitative approach using a hermeneutic phenomenological design to deeply explore the lived experiences of micro-business owners adopting cashless payment systems (Usop, 2019). Informants were selected using purposive sampling, with inclusion criteria requiring owners to have actively used digital payment instruments (such as QRIS or digital wallets) for at least the past year and to be directly involved in managing their business finances. Primary data were collected through semi-structured, in-depth interviews, allowing informants to naturally share without intervention their challenges, adaptations, and interpretations regarding this digital transformation. In addition to interviews, passive participatory observation of daily transaction activities at business locations and the review of digital financial records were conducted to strengthen data validity through source and method triangulation (Yulianah, 2022).

All qualitative data obtained were subsequently analyzed using an interpretive thematic analysis method adapted from van Manen's phenomenological analysis model. The analysis process began with the verbatim transcription of interview data, followed by repeated, reflective readings to capture the essence and smallest units of meaning within the informants' experiences. Subsequently, a data coding process was conducted to categorize these meaning units into key themes representing psychological dynamics, technical barriers, and strategies for adapting to digital financial management. To ensure data trustworthiness, the study employed a credibility check via "member checking," wherein transcripts and preliminary interpretations were verified with the informants. Dependability and confirmability were also established through the creation of a systematic audit trail, ensuring that all conclusions drawn were grounded in field data and free from researcher subjectivity.

Result And Discussion

Cash Accountability and Financial Demarcation in Micro-Enterprises

Research findings indicate that the adoption of cashless payment systems specifically the Quick Response Code Indonesian Standard (QRIS) and digital wallet applications has fundamentally transformed financial record-keeping structures at the micro-enterprise level (Yulianah, 2024). Prior to entering the digital ecosystem, the majority of informants relied on traditional cash management systems that depended heavily on memory or manual, physical bookkeeping. Conventional paper-based cashbooks are highly susceptible to human error, physical damage, and data loss due to negligent storage. Consequently, business owners often lack an accurate picture of their actual profit or loss performance over a given accounting period.

The advent of cashless payment systems has introduced a technological leap in the form of automated transaction history features (an automated digital ledger) that operate in real-time. Whenever a consumer scans a QR code or makes a transfer, the system automatically records the time, amount, and transaction details without requiring manual intervention from the business owner (Yatna & Yulianah, 2024). This digital audit trail provides a level of accountability and data precision previously unattainable for micro-enterprises. Oversight of every incoming rupiah becomes far more rigorous, thereby minimizing potential financial leakage caused by miscalculating change or the physical loss of cash.

From the perspective of daily operational management, this automated record-keeping significantly reduces the administrative workload that is often burdensome for micro-enterprise owners. In conventional systems, closing the shop at the end of the day invariably involves a cash count physically tallying the money in the cash drawer against sales receipts. This process frequently causes psychological stress when a discrepancy arises between the physical cash and estimated sales figures. With cashless systems, business owners are relieved of this routine, as the digital balance displayed on the payment service provider's app accurately reflects the objective transaction value recorded throughout the day.

Furthermore, the transparency resulting from this digital transaction history has triggered a behavioral shift among micro-entrepreneurs regarding how they view their financial data. Transaction data previously regarded merely as proof of payment is now increasingly seen as a valuable information asset. Several informants noted that they have begun reviewing the daily and weekly summaries provided by the platform to identify the days when their businesses achieve peak sales volumes. This simple evaluative practice serves as a crucial first step for micro-enterprises to begin adopting modern, data-driven business management principles.

Beyond enhancing cash accountability, this digital financial transformation has successfully addressed one of the most persistent, underlying issues in the micro-enterprise sector: the commingling of personal and business funds. In conventional micro-business practices, the shop's cash drawer often doubles as the family wallet. Daily sales revenue is frequently withdrawn on the spur of the moment to cover household consumption needs, children's school fees, or other urgent expenses, often without clear record-keeping. This phenomenon leads to the inadvertent erosion of business capital, ultimately precipitating premature business failure due to a lack of liquidity for restocking inventory.

The adoption of cashless instruments indirectly enforces a clear financial demarcation through the system's architecture. When entrepreneurs register with digital payment service providers, they are required to create a dedicated merchant account separate from their personal account. The direct flow of consumer payments into a business bank account or digital wallet creates both a psychological and operational barrier for the business owner. Since the funds no longer exist as tangible cash immediately at hand, the owner's impulse to spend the money on non-business, consumptive purposes is reduced.

This separation of access fosters a new financial discipline, positioning funds within digital accounts as dedicated working capital essentially a protected reserve. Informants in this study noted that maintaining a digital balance facilitates the implementation of stricter budgeting systems. They tend to let sales proceeds accumulate in their digital accounts until the end of the month or until the scheduled time for restocking inventory. Empirically, this practice of delaying withdrawals helps stabilize business cash flow by ensuring the availability of reserve funds securely locked within the digital ecosystem specifically for inventory turnover.

The positive impact of this financial demarcation extends to enhancing the managerial capacity of micro-entrepreneurs, enabling them to objectively measure net business profits. Because incoming funds are consolidated through a single digital channel, business owners can easily calculate total monthly gross revenue and more accurately deduct operating expenses. They are able to set a "salary" for themselves drawn periodically from business profits rather than haphazardly withdrawing daily earnings. This internal professionalization serves as a key indicator that the micro-enterprise is transitioning from a mere subsistence operation into a growth-oriented business entity.

Theoretically, organized cash accountability and clear financial demarcation pave the way for broader financial inclusion within the micro-enterprise sector. A neat, consistent digital transaction record serves as a valid and legitimate financial portfolio. When a micro-enterprise requires additional capital from formal financial institutions such as banks this history of cashless transactions can be presented as evidence of creditworthiness. Thus, the digital transformation of financial management represents more than just a change in transaction tools at the point of sale; it establishes a structural foundation that strengthens the financial resilience and competitiveness of micro-enterprises amidst dynamic market conditions.

Techno-Economic Barriers and Operational Friction

Although cashless payment systems offer a significant leap forward in terms of record-keeping accountability, the empirical experience of micro-entrepreneurs reveals that this transition is fraught with complex techno-economic obstacles. In practical terms, the adoption of financial technology requires reliable and stable supporting infrastructure. However, the reality on the ground often reveals a wide gap between the expected efficiency of the technology and the capacity of local infrastructure. The friction arising from these technical limitations and economic consequences serves as a decisive factor influencing the extent to which micro-entrepreneurs accept or reject the digital ecosystem.

The primary technical hurdle consistently cited by informants is the instability of internet connections at their business locations. Micro-enterprises which largely operate in traditional markets, along roadsides, or in densely populated areas frequently encounter "dead zones" or signal degradation from mobile network operators. When the internet connection is disrupted, scanning QRIS codes or authenticating transactions via digital wallet apps results in failures or prolonged delays. For a micro-enterprise relying on high-speed transaction volumes, such technical glitches instantly halt operations at the point of sale.

A direct consequence of these delayed payment confirmations is significant psychological anxiety for business owners. The abstract nature of digital transactions means entrepreneurs cannot physically see or hold the funds immediately after a transaction concludes. When a successful transaction notification is delayed on the merchant app, owners face a dilemma, whether to let the customer leave with the merchandise or detain them until the system recovers. This uncertainty breeds fear of potential financial loss due to fraudulent transactions or fund transfer failures issues that are difficult for micro-entrepreneurs to trace independently.

Beyond triggering internal anxiety, such technical friction simultaneously degrades the quality of the relationship between micro-enterprises and their customers. In the micro-business ecosystem, service speed and transaction convenience are key competitive advantages. Long queues at the checkout, caused by slow cashless payment verification processes, often frustrate both the customer currently being served and those waiting in line. In some instances, these technical hurdles compel customers to cancel their purchases or switch to a nearby competitor that still accepts cash prioritizing time efficiency.

From an economic perspective, these operational constraints are compounded by transaction fees, or the Merchant Discount Rate (MDR). The administrative deduction applied to every cashless transaction is perceived as an additional burden that directly erodes the profit margins of micro-enterprises margins that are already razor-thin. While the percentage may appear negligible to medium- and large-scale businesses, the cumulative impact of these deductions on the monthly sales volume of the micro-sector represents a significant nominal amount. This situation fosters economic resistance, as business owners feel that digitalization actually diminishes the net income they would otherwise receive in full.

This economic resistance is further compounded by the phenomenon of fund retention or settlement delays imposed by payment service providers. Sales proceeds generated through cashless systems cannot be immediately withdrawn as cash on the same day; instead, they require a clearing process lasting anywhere from one to several business days. A defining characteristic of micro-enterprises is their heavy reliance on rapid daily liquidity to circulate working capital. These delays in digital fund disbursement disrupt the cycle of restocking raw materials for the following morning, forcing business owners to seek cash advances from other sources often inefficient ones.

To cope with the economic strain caused by fee deductions and liquidity delays, some micro-entrepreneurs have adopted compensatory strategies that run counter to the spirit of digital inclusion. Some informants admitted to passing Merchant Discount Rate (MDR) costs directly onto consumers by raising product prices specifically for cashless payments or by setting minimum spending thresholds for non-cash transactions. Ultimately, these restrictive practices create a new disincentive for consumers to transact digitally at these stores, thereby slowing the overall pace of cashless ecosystem adoption at the grassroots level.

Theoretically, these techno-economic hurdles demonstrate that financial digital transformation cannot succeed if implemented piecemeal merely by providing the applications themselves. Successful adaptation by micro-enterprises hinges heavily on the readiness of the supporting macro-ecosystem, including fee regulations that favor the micro-scale and guarantees of stable, widespread telecommunications network coverage. Without policy interventions capable of minimizing technical friction and alleviating these operational financial burdens, the digital transition experience for most micro-entrepreneurs will continue to be viewed as a new operational burden rather than a solution for long-term efficiency.

Digital Literacy Gaps and Cultural Resilience

Beyond the efficiency offered by financial technology, the successful adoption of cashless payment systems in the micro-enterprise sector is heavily influenced by human capital readiness. Research findings reveal a significant and fundamental digital literacy gap among the majority of micro-entrepreneurs. Basic smartphone proficiency such as using social media or instant messaging apps does not correlate linearly with the capacity to understand digital financial management. This literacy limitation creates a new cognitive barrier: technology intended to simplify tasks is instead perceived as a complex and confusing system.

A lack of understanding regarding the technical architecture of merchant applications is a primary manifestation of this low digital literacy. Many informants reported feeling disoriented when faced with app update procedures, periodic identity verification processes (Know Your Customer or KYC), or the interpretation of internal reporting menus. When systemic issues arise—such as pending payments micro-entrepreneurs generally do not know how to conduct independent troubleshooting. They struggle to distinguish between network connectivity issues, consumer banking errors, and malfunctions within the payment service provider's application.

This state of literacy-related helplessness directly impacts the entrepreneurs' psychological vulnerability regarding cybersecurity issues. The fear of losing digital funds to financial cybercrimes such as phishing, fake transfer receipt scams, or account hacking creates a constant source of anxiety. This fear is well-founded, stemming from an inability to distinguish between official app security features and manipulative links or messages sent by third parties. Consequently, rather than leveraging advanced features, these entrepreneurs tend to adopt a passive and defensive stance when exploring the utility of available financial technologies.

The structural impact of limited digital proficiency has triggered a phenomenon where operational management tasks are delegated to third parties. Micro-business owners who are older or have limited formal education often outsource the technical maintenance of their digital accounts to their children, younger relatives, or shop employees. While this structural dependency helps resolve short-term operational issues, it simultaneously diminishes the owners' autonomy in making strategic business decisions. Consequently, owners lose direct control over access to essential financial data and fail to build the independent adaptive capacity required for long-term business viability.

Furthermore, this digital literacy gap extends to an inability among micro-business owners to utilize automated transaction data for basic business analytics. Modern digital payment platforms typically offer features such as visualizations of monthly revenue, identification of best-selling products, and summaries of consumer spending habits. However, this data rich in business insights is often overlooked and left to accumulate as meaningless digital history. A lack of analytical capacity prevents this data from being translated into concrete managerial decisions, such as inventory procurement planning, strategic price adjustments, or product diversification.

From a sociological perspective, the challenge of digital transformation is further complicated by cultural resilience specifically, a cash-dominant culture that remains deeply entrenched in traditional market ecosystems. For the grassroots community, physical cash serves not merely as a liquid medium of exchange but also holds psychological value as a tangible, palpable representation of economic success. Transitioning to a cashless system requires dismantling cultural habits that have been established for decades. For some business owners, the absence of physical sales cash in the shop drawer triggers emotional uncertainty regarding the actual profitability of their business.

This cultural resilience is further reinforced by the structure of the local market ecosystem, which remains hybrid and asymmetrical. Micro-entrepreneurs find themselves squeezed within an economic supply chain that has not yet fully digitized. Although willing to offer cashless payment options to end consumers, they face the reality that wholesale suppliers of key raw materials still demand full cash payments. This ecosystem misalignment compels micro-entrepreneurs to constantly convert a portion of their digital earnings into physical cash a withdrawal process that consumes time and incurs additional operational costs.

Ultimately, the dilemma inherent in this hybrid ecosystem gives rise to a superficial or half-hearted pattern of technology adoption. Many micro-enterprises display QRIS codes at their checkout counters merely to cater to a small segment of modern consumers or simply to follow trends and avoid appearing outdated. Internally, however, they fail to integrate these digital payment systems into their core financial management. Primary bookkeeping and capital calculations continue to operate under conventional paradigms, preventing them from fully realizing the essential benefits of digital transformation such as transparency, accountability, and efficiency.

Conceptually, this phenomenon of literacy gaps and cultural resilience underscores that financial technology adoption at the grassroots level is not a mechanistic, automatic process, but rather a complex socio-cultural adaptation. Micro-entrepreneurs are not passive agents who simply absorb new digital instructions; instead, they negotiate these innovations against local value systems, their existing knowledge, and the pragmatic demands of their environment. Consequently, any push to accelerate digital transformation that overlooks the cognitive capacities and cultural habits of business owners will likely result only in latent resistance or dysfunctional technology usage.

Conclusion

This study concludes that digital transformation specifically the adoption of cashless payment systems in the micro-enterprise sector fosters a dualistic managerial dynamic, where opportunities for structural efficiency clash directly with operational capacity constraints on the ground. On one hand, digital systems successfully address latent issues within micro-enterprises by enabling accurate automated cash recording and instilling a new discipline of strictly separating household finances from business capital. This digital audit trail not only enhances internal transparency but also lays a crucial foundation for formal financial inclusion. On the other hand, these potential benefits remain unrealized due to pressing techno-economic hurdles: unstable network infrastructure, per-transaction administrative fees that erode slim profit margins, and fund disbursement delays that disrupt daily business liquidity. This complexity is further compounded by a digital financial literacy gap and a deeply ingrained "cash-dominant" culture, causing technology adoption at the grassroots level to remain largely superficial and fragmented.

Based on these findings, several strategic recommendations are proposed for stakeholders to optimize the sustainability of this digital financial transformation. For the government and monetary authorities, more affirmative regulatory interventions are required, such as periodic reviews of Merchant Discount Rate (MDR) schemes tailored to the micro-sector, accelerated sales fund clearing to maintain business liquidity, and the expansion of stable telecommunications infrastructure in traditional markets. For digital payment service providers, merchant application interfaces should be simplified to include user-friendly cyber-risk education features and business analytics visualizations that are easily understood without requiring advanced accounting expertise. Finally, future researchers are advised to expand the scope of the study employing a quantitative approach or mixed methods to measure, at a macro level, the impact of cashless payment adoption on revenue growth and the long-term resilience of micro-enterprises across regions with diverse socio-demographic characteristics.

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