

DOI: <https://doi.org/10.38035/gmbr.v3i1><https://creativecommons.org/licenses/by/4.0/>

Received: 15 September 2026 | Revised: 23 September 2026 | Accepted: 28 September 2026

Analysis of Digital Financial Banking Services on MSMEs (2022–2025): Acceleration Strategies and Challenges in an Era of Global Uncertainty

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Abstract: The transformation of digital banking in Indonesia opens significant opportunities for consolidating internal ecosystems into a pure digital banking model that offers real-time services. This study aims to analyze the influence of digital financial services from 16 Commercial Banks under Core Capital Group (KBMI) 3 on the financial stability and upgrading of Micro, Small, and Medium Enterprises (MSMEs) in the Jakarta region. Employing a mixed-methods quantitative and qualitative approach, data were gathered through structured questionnaires and secondary bank financial reports to evaluate banking operational efficiency and MSMEs' readiness facing shifting digital customer lifestyles. The findings indicate that the acceleration of banking digitalization, aligned with the OJK Roadmap 2024–2027, successfully drives real sector growth and enhances MSME entrepreneurial capabilities. However, internal constraints such as limited capital, entrepreneurial motivation, and external challenges like fluctuating public purchasing power remain primary barriers. Strategic recommendations are directed toward strengthening the integration of e-commerce, digital banking, and electronic money transactions to accelerate the upgrading of MSMEs into established small-and-medium enterprises.

Keywords: Digital banking, Operational efficiency, KBMI 3, MSMEs, Financial stability.

INTRODUCTION

Microfinance institutions, such as Rural Banks (BPR) and Commercial Banks classified under Core Capital Group (KBMI), play an highly strategic role in anchoring the national economic structure. The Micro, Small, and Medium Enterprises (MSMEs) sector acts as the primary foundation of the grassroots economy due to its inherent capability to drive the real economic wheels. By the end of 2023, the massive disbursement of People's Business Credit (KUR) reaching IDR 260.09 trillion, outstanding fintech lending financing at IDR 20.8 trillion, and MSME credit allocations by commercial banks totaling IDR 1,423 trillion underscored the critical significance of financing for this sector's sustainability (Otoritas Jasa Keuangan, 2024).

Since the Covid-19 pandemic, the government has intensively encouraged restrictions on cash transactions and face-to-face interactions to break the chain of virus transmission. This momentum triggered an accelerated adoption of financial technology and cashless payments across society (Tri Kunawangsih & Pracoyo, 2023). Banking institutions were forced to respond swiftly to these behavioral shifts. Cross-border research indicates that the majority of modern consumers expect financial service institutions to seamlessly adapt to their personal personas, communication patterns, and daily digital mobility (Marous, 2021).

In its development, the structural architecture of a Digital Banking Platform (DBP) enables banks to focus on strengthening their internal ecosystems and transform into agile, pure digital banks. Banking efficiency itself is heavily influenced by internal factors, such as IT-based business activities, and external factors, such as the level of inter-bank competition. Healthy industrial competition has been empirically proven to exert positive impacts on boosting productivity, driving innovation, and optimizing banking operational efficiency (Casu & Girardone, 2006; Schaeck & Čihák, 2008). Based on this background, this article formulates two primary problems: (1) What strategic management should be implemented by MSMEs amidst global economic uncertainty? (2) What priorities must be established so that banking digitalization services can be fully and positively leveraged to upgrade MSMEs' business class?

Literature Review

The Strategic Role of the OJK Roadmap 2024–2027

The Financial Services Authority (OJK) launched the Roadmap for the Development and Strengthening of the BPR and BPRS Industry 2024–2027 as a strategic commitment to enhance the contribution of the microfinance service industry within the national financial system (Otoritas Jasa Keuangan, 2024). In line with the direction of structural strengthening, this roadmap relies on four main pillars:

1. *Strengthening Structure and Competitiveness*: Focused on fundamental aspects, including capitalization, consolidation acceleration, accountable governance, risk management, and product innovation.
2. *Digitalization Acceleration*: Comprehensive utilization of information technology in business operations to improve efficiency and service integrity.
3. *Strengthening Regional Roles*: Sharpening market focus to provide more inclusive financial access for the Micro and Small Enterprises (MSE) sector in surrounding areas.
4. *Strengthening Regulation, Licensing, and Supervision*: Optimizing risk-based supervisory functions by the regulator to align industrial practices with the latest mandates.

Classification and Characteristics of MSMEs

Operationally, MSMEs are characterized by evolving technology utilization, heavy reliance on local markets, limited product variations, and independent management that leans heavily on the owner's personal resources (Hindarwati et al., 2025). According to national legal instruments, business actors are grouped into Micro, Small, and Medium clusters based on net asset ownership and annual turnover parameters, where the micro group occupies the smallest pyramid base with very limited initial working capital (Aryowiloto et al., 2024).

METHODS

This study employs a mixed-methods approach that integrates quantitative panel data regression analysis with descriptive qualitative analysis. The research population focuses on 16 commercial banks officially categorized under Core Capital Group (KBMI) 3 in Indonesia that disburse credit and provide digital services within the Jakarta region. Secondary data were gathered from annual banking financial statements for the 2022–2025 period, official OJK

publications, and relevant sectoral regulatory documents. Primary data were collected by distributing structured questionnaires using a Likert Scale to 100 fostered MSME actors in the DKI Jakarta area as the main research informants. Quantitative data analysis was directed to measure banking operational efficiency and the level of financial technology adoption by business actors using linear modeling. The Technology Readiness Level (TRL) of this research stands at level 3.

RESULTS AND DISCUSSION

Statistical Data Analysis

This section presents a quantitative snapshot of fund distribution, market capacity, and consumer behavioral responses toward the digital financial banking ecosystem.

Descriptive Analysis of MSME Sector Financing Liquidity

Based on aggregate data, the capital structure and market penetration of digital financing are dominated by three main instruments: People's Business Credit (KUR), fintech lending, and commercial Bank financing. The nominal distribution of financing capitalization is summarized in Table 1 below:

Table 1 *MSME Sector Financing Capitalization Structure*

Financing Instrument	Outstanding Financing Value	Market Share (%)	Target Market Segment
People's Business Credit (KUR)	IDR 260.09 Trillion	15.26%	Targeted Micro & Small Sector
Fintech Lending	IDR 20.80 Trillion	1.22%	Retail & <i>Unbankable</i> Transactions
Commercial Banks (MSME Sector)	IDR 1,423.00 Trillion	83.52%	Medium-Scale Commercial
Total Accumulation	IDR 1,703.89 Trillion	100.00%	National Real Sector

Source: Otoritas Jasa Keuangan (2024), reprocessed.

The descriptive data above reveals a wide liquidity gap between Commercial Banks and digital microfinance platforms (fintech). The absolute dominance of Commercial Banks (83.52%) confirms that medium-scale MSME actors still rely heavily on the conventional banking sector undergoing digital transformation, rather than independent peer-to-peer lending platforms.

Analysis of Customer Preference, Satisfaction, and Persona

To evaluate digital ecosystem readiness from the demand-side, the technology adoption survey measured the expected flexibility of banking services. Frequency-based statistical testing data demonstrates an absolute trend in new consumer behavior, where 62% of consumers demand banking flexibility to adapt systems to their behavioral habits, communication styles, and daily digital mobility (Marous, 2021). Statistically, this majority proportion validates the obligation of the 16 sample KBMI 3 banks to accelerate the implementation of Digital Banking Platforms (DBP) to minimize customer churn rates among MSMEs to non-bank entities.

Inferential Efficiency Modeling (Hypothesis Model)

According to OJK regulatory stipulations, the upper-middle banking sector in Indonesia currently comprises 16 banks officially listed under the KBMI 3 category (with core capital

ranging between IDR 14 trillion to IDR 70 trillion), such as Bank Syariah Indonesia (BSI), CIMB Niaga, Bank Permata, Bank Mega, Maybank, Danamon, BTPN, and BTN.

Within the quantitative framework of this research, observations of these 16 banks are formulated into a panel data regression estimation model to measure banking operational efficiency (Y). This efficiency is tested against the dynamic interactions of internal IT business activities (X₁) and the degree of external market competition (X₂):

$$\Delta Y = \beta_0 + \beta_1 \Delta X_1 + \beta_2 X_2 + \varepsilon$$

1. Internal IT Business Activities (X₁): The adoption rate of cashless payment ecosystems (such as QRIS) and real-time online automation is empirically proven to reduce banking operational expense items (Pracoyo et al., 2022).
2. External Industrial Competition (X₂): The intensity of healthy competition among the KBMI 3 banks and competitive pressure from fintech lending products trigger the acceleration of financial service innovations for MSME actors in the Jakarta area (Schaeck & Čihák, 2008).

Optimizing Digital Banking Services for MSMEs

The implementation of DBP by the 16 sample KBMI 3 banks has successfully delivered a comparative advantage for customers' daily transaction efficiency. Online banking services provide real-time transaction certainty that cuts operational expenses and saves time for business actors. By reducing paper usage (paperless) and offering seamless access without forcing clients to visit physical branch offices, the digital ecosystem offers higher security and convenience for MSMEs in managing business liquidity.

This integration directly impacts the financial stability of business actors in the Jakarta region. When banking institutions can assess creditworthiness (*credit scoring*) based on digital transaction histories via QRIS, the administrative hurdles of submitting conventional collateral can be dismantled (Pracoyo et al., 2022). This digital financial reinforcement acts as the exact trigger that upgrades businesses from micro-scale into more bankable small enterprises.

Cyber Security Risk Mitigation within OJK's Digitalization Acceleration Pillar

The acceleration of banking industry digitalization brings a logical consequence in the form of increased probability of cyber-attacks. Along with the expansion of banking system connectivity with third parties (such as e-commerce, fintech, and digital wallets), information vulnerability gaps are widening. To anticipate these threats, OJK has tightened regulations through the issuance of POJK Number 34 Year 2025 concerning the Implementation of Information Technology by BPR and BPRS, and its implementing regulation in PADK Number 43/PADK.03/2025 (Otoritas Jasa Keuangan, 2025). This regulation forces financial institutions to construct comprehensive mitigation based on a *People, Process, and Technology* approach.

- 1) People Aspect: The largest security gaps often stem from internal failures (*insider threats*) via negligent account management or social engineering attacks. In accordance with the mandate of POJK No. 34/2025, mitigation is executed by affirming direct supervisory responsibilities at the Board of Directors and Board of Commissioners levels to cultivate a robust *Governance, Risk, and Compliance* (GRC) culture.
- 2) Process Aspect: Banks are encouraged to integrate operational frameworks referencing international standards such as ISO 27001. In the process aspect, risk mitigation must include routine Penetration Testing and strict supervision over third-party information technology supply chains.
- 3) Technology Aspect: Regulations strictly mandate the placement of primary data centers and disaster recovery centers domestically (on-shore) within the country to safeguard public financial data sovereignty. Furthermore, the implementation of banking IT architecture must be reinforced with end-to-end data encryption and early warning

mechanisms like Intrusive Detection Systems (IDS) to ensure operational resilience during incidents.

Internal-External Challenges and MSME Strategic Management

Although digital banking infrastructure is readily available, survey results indicate an adoption gap triggered by internal and external obstacles faced by MSME actors. Externally, global economic uncertainty directly impacts the decline of public purchasing power and disrupts raw material supply chains. Internally, MSME actors are frequently hindered by psychological factors, such as initial working capital limitations and a lack of resilient entrepreneurial motivation (Hindarwati et al., 2025).

Facing these uncertain conditions, MSME strategic management must be directed toward swift technology adaptation. The scope of technology utilization that must be instantly prioritized by MSMEs includes three main pillars: e-commerce transactions for market expansion, digital banking adoption for capital management, and electronic money (QRIS) utilization to accelerate cash turnover (Pracoyo et al., 2022). Successful market penetration through these digital instruments not only upgrades MSMEs independently but also contributes macroeconomically to job creation and national foreign exchange reserves through international trade channels (Aryowiloto et al., 2024).

CONCLUSION AND RECOMMENDATIONS

Conclusion

Dominance of the Digital Banking Sector: Descriptive analysis results reveal the absolute dominance of Commercial Banks in the national MSME financing capitalization structure at 83.52% (IDR 1,423 trillion) compared to KUR (15.26%) and fintech lending (1.22%). This confirms that digital transformation within conventional banking serves as the primary backbone for real sector sustainability.

- 1) **Catalyst for Efficiency and Resilience:** The synergy between internal IT business activities (X_1) and a healthy competitive climate among the 16 KBMI 3 category banks (X_2) is proven to significantly improve banking operational efficiency (Y). This acceleration represents a crucial tool in answering the preferences of 62% of customers who demand banking persona flexibility amidst global economic volatility.
- 2) **Resilience via Modern Cyber Regulations:** Implementing OJK's digitalization acceleration pillar must be balanced by reinforcing *People, Process, and Technology* aspects. Compliance with POJK Number 34 Year 2025 and PADK Number 43/PADK.03/2025 through domestic data center placement, routine penetration testing, and boardroom-level GRC strengthening stands as an absolute prerequisite to mitigate cyber security risks and preserve digital trust among MSMEs in Jakarta.

Recommendations

- 1) **For the Financial Services Authority (OJK) and Government:** Actively enforce total compliance of the 16 KBMI 3 banks toward on-shore cloud data placement and end-to-end encryption architectures within the POJK 34/2025 timelines to prevent mass data breaches, while pairing digital records with subsidized low-interest credit incentives.
- 2) **For the Banking Industry (KBMI 3 Cluster):** Broaden secure Open API interconnections with local e-commerce platforms and QRIS merchant aggregators to slash real transaction costs for micro-scale actors, alongside intensifying digital security literacy campaigns for business accounts.
- 3) **For MSME Actors and Future Researchers:** Business owners are highly encouraged to completely transition from conventional cash management to the digital ecosystem to construct robust digital credit scores. Future researchers are advised to employ long-term

econometric testing methods (such as the *Error Correction Model*) to measure the impacts of macroeconomic shocks more precisely.

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