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THE IMPACT OF BANKING DIGITALIZATION AND PRODUCTIVE CREDIT DISTRIBUTION ON THE PERFORMANCE OF MICRO,SMALL, AND MEDIUM ENTERPRISES (MSMES) DURING THE 2023–2025 PERIOD

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ABSTRACT

This study aims to analyze the impact of banking digitalization and productive credit distribution on the performance of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia during the period 2023–2026. The rapid development of digital technology in the banking sector has introduced various digital financial services that facilitate financing access, transactions, and financial management for MSMEs. Meanwhile, productive credit serves as an essential instrument in improving business capacity, productivity, and competitiveness. This research employed a quantitative approach using an explanatory research design. The sample consisted of 200 MSME owners who utilized digital banking services and received productive loans from banking institutions across Indonesia. Data were analyzed using multiple linear regression supported by statistical software. The findings revealed that banking digitalization had a positive and significant effect on MSME performance, contributing 38.4% to performance improvement. Productive credit distribution also had a positive and significant impact, contributing 42.7%. Simultaneously, both variables explained 68.5% of the variance in MSME performance. These findings indicate that enhancing access to digital banking services and optimizing productive credit programs can become effective strategies for strengthening sustainable MSME growth. This study provides implications for policymakers, banking institutions, and business actors in formulating strategies to strengthen the national digital economic ecosystem and improve financial inclusion among MSMEs.

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) constitute the backbone of the Indonesian economy by making substantial contributions to national economic growth, employment generation, and income distribution. According to the Ministry of Cooperatives and SMEs of the Republic of Indonesia, MSMEs account for more than 61% of the national Gross Domestic Product (GDP) and absorb over 97% of the country's workforce. These figures highlight the strategic importance of MSMEs in sustaining economic stability and promoting inclusive economic development. Despite their significant role, MSMEs continue to face various challenges, including limited access to formal financing, inadequate digital financial literacy, inefficient financial management, and low adoption of digital technologies.

The rapid advancement of information technology has accelerated the digital transformation of the banking sector. Banking digitalization is reflected in the widespread adoption of mobile banking, internet banking, Quick Response Code Indonesian Standard (QRIS), virtual accounts, electronic payments, and other technology-based financial services. Through the implementation of the Indonesian Payment System Blueprint (BSPI) 2025, Bank Indonesia continues to strengthen the national digital payment ecosystem to enhance financial inclusion and support the digital economy. By 2025, the volume of digital banking and QRIS transactions had increased significantly, indicating growing public acceptance of digital financial services. This development provides greater opportunities for MSMEs to utilize digital banking services in improving their business performance.

Banking digitalization offers numerous advantages for MSMEs, including greater transaction efficiency, faster payment processing, broader market access, and improved financial record-keeping. Digital financial services enable business owners to monitor financial information in real time, thereby facilitating more accurate and timely business decisions. Furthermore, cashless transactions enhance financial transparency while reducing operational costs. From the perspective of the Technology Acceptance Model (TAM), the adoption of technology is primarily influenced by perceived usefulness and

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perceived ease of use. Consequently, higher acceptance of digital banking services is expected to improve the productivity and competitiveness of MSMEs.

In addition to banking digitalization, productive credit plays a crucial role in supporting the growth and sustainability of MSMEs. Productive credit refers to financing provided for investment and business expansion activities that increase production capacity, operational efficiency, and business income. Capital constraints remain one of the primary obstacles preventing MSMEs from expanding their operations. Therefore, access to productive financing through banking institutions is essential for enhancing the competitiveness of MSMEs in an increasingly dynamic business environment.

The Indonesian government, together with the banking sector, has introduced various financing schemes such as People's Business Credit (Kredit Usaha Rakyat/KUR), working capital loans, and other subsidized financing programs to improve MSMEs' access to capital. Nevertheless, disparities in productive credit distribution remain evident. Many MSMEs still encounter difficulties in obtaining financing due to insufficient collateral, inadequate financial reporting, limited financial literacy, and suboptimal utilization of digital banking services. These challenges indicate that expanding financial access should be accompanied by strengthening MSMEs' capabilities in utilizing digital financial technologies to maximize the effectiveness of business financing.

Previous empirical studies have demonstrated that both banking digitalization and productive credit significantly influence MSME performance. Nizar and Sholeh (2023) found that the adoption of digital banking positively and significantly improved operational efficiency and business turnover among MSMEs. Similarly, Sari and Hidayat (2022) reported that access to People's Business Credit (KUR) enhanced production capacity, business income, and the sustainability of micro and small enterprises. Furthermore, Putri, Rahman, and Wibowo (2024) revealed that integrating digital payment systems with banking financing positively affected MSME competitiveness, particularly in the context of the digital economy. These findings suggest that digital transformation and productive financing complement one another in improving business performance.

Despite these findings, previous studies have primarily examined the effects of banking digitalization and productive credit independently. Research investigating the simultaneous influence of these two variables on MSME performance remains limited, particularly within the context of Indonesia's rapidly evolving digital economy during the 2023–2026 period. Moreover, the expansion of QRIS implementation, increasing adoption of mobile banking, broader digital payment ecosystems, and government initiatives promoting MSME digitalization necessitate updated empirical evidence regarding the effectiveness of banking digitalization and productive credit in enhancing MSME performance. Consequently, a significant research gap remains regarding the integrated influence of these factors.

The urgency of this study is further reinforced by the Indonesian government's commitment to accelerating digital economic transformation through expanded financial inclusion and MSME digitalization. Banking digitalization without adequate access to productive credit may prevent MSMEs from realizing their full productivity potential. Conversely, productive credit without sufficient digital banking capabilities may reduce the effectiveness of business financing utilization. Therefore, comprehensive empirical research is needed to examine the simultaneous relationship between banking digitalization, productive credit distribution, and MSME performance.

Based on these considerations, this study aims to analyze the influence of banking digitalization and productive credit distribution on the performance of Indonesian MSMEs during the 2023–2026 period. The novelty of this research lies in simultaneously examining these two strategic variables within the context of Indonesia's accelerating digital transformation while considering recent developments in digital banking services and productive financing policies. The findings are expected to contribute theoretically to the literature on financial management, digital transformation, and MSME development, while also providing practical recommendations for policymakers, banking institutions, and MSME stakeholders in strengthening the competitiveness and sustainability of MSMEs in the digital era.

2. METHODS

This study employed a quantitative approach using an explanatory research design to examine the causal relationships between banking digitalization, productive credit distribution, and the performance of

Micro, Small, and Medium Enterprises (MSMEs). A quantitative approach was selected because it enables the objective measurement of the magnitude of relationships among variables through statistical analysis (Sugiyono, 2022). Meanwhile, explanatory research is appropriate for testing hypotheses and explaining cause-and-effect relationships among variables through empirical investigation (Creswell & Creswell, 2018).

The study population consisted of all MSME owners in Indonesia who utilized digital banking services and received productive credit from banking institutions during the 2023–2025 period. Considering the large and geographically dispersed population, purposive sampling was employed to select respondents based on specific criteria consistent with the research objectives (Sugiyono, 2022). The sampling criteria included: (1) operating an active business for at least two years; (2) using digital banking services; and (3) having received productive credit from a commercial bank. Based on these criteria, a total of 200 respondents were selected. This sample size was considered adequate for multiple linear regression analysis, as it satisfies the minimum sample size requirements recommended for multivariate research (Hair et al., 2019).

The first independent variable was banking digitalization (X_1), measured using five indicators: ease of digital transactions, accessibility of banking services, utilization of mobile banking, transaction security, and operational efficiency. The second independent variable was productive credit distribution (X_2), measured through ease of credit access, amount of credit received, interest rate, repayment flexibility, and utilization of credit for business development. The dependent variable was MSME performance (Y), measured by business turnover growth, business profit, productivity, market expansion, and business sustainability. The selection of these indicators was based on the operational definitions of variables developed from previous studies on banking digitalization, access to financing, and MSME performance (Hair et al., 2019).

Data were collected using a structured questionnaire based on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The Likert scale was chosen because it effectively measures respondents' attitudes, perceptions, and opinions in a quantitative manner (Sugiyono, 2022). In addition, documentation of MSME development reports and a comprehensive literature review of scientific journals, books, and official government publications were conducted to provide supporting data. Prior to data collection, the research instrument was subjected to validity and reliability tests to ensure that it accurately and consistently measured the intended constructs (Ghozali, 2021).

The data analysis consisted of several stages. First, descriptive statistical analysis was performed to describe respondents' characteristics and the distribution of each research variable. Second, classical assumption tests, including the normality test, multicollinearity test, and heteroscedasticity test, were conducted as prerequisites for multiple linear regression analysis (Ghozali, 2021). Third, multiple linear regression analysis was employed to examine the effects of banking digitalization and productive credit distribution on MSME performance using the following regression model:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$

Where:

- Y = MSME Performance
- α = Constant
- β_1, β_2 = Regression coefficients
- X_1 = Banking Digitalization
- X_2 = Productive Credit Distribution
- ε = Error term

Finally, a t-test was conducted to examine the partial effect of each independent variable on MSME performance, while an F-test was used to assess the simultaneous effect of both independent variables. Furthermore, the coefficient of determination (R^2) was calculated to evaluate the proportion of variance in MSME performance explained by the regression model (Ghozali, 2021).

3. RESULTS AND DISCUSSIONS

Results

This study involved 200 Micro, Small, and Medium Enterprise (MSME) owners located across various regions of Indonesia who had utilized digital banking services and received productive credit during the 2023–2025 period. Data were collected through a structured questionnaire measuring three main variables: banking digitalization (X_1), productive credit distribution (X_2), and MSME performance (Y). Prior to hypothesis testing, the collected data were subjected to validity, reliability, and classical assumption tests to ensure that the research instruments were valid and reliable for statistical analysis.

Tabel 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	118	59.0
	Female	82	41.0
Business Age	1–3 years	54	27.0
	4–6 years	78	39.0
	>6 years	68	34.0
Business Sector	Trade	85	42.5
	Services	52	26.0
	Manufacturing	63	31.5
Digital Banking Usage	<2 years	46	23.0
	2–4 years	89	44.5
	>4 years	65	32.5

As presented in Table 1, the majority of respondents were male (59.0%). Most businesses had operated for 4–6 years (39.0%), while the largest proportion of respondents were engaged in the trade sector (42.5%), indicating that trading businesses represent the largest group of MSMEs utilizing digital banking services and productive credit facilities.

Tabel 2. Descriptive Statistics of Research Variables

Variable	Regression Coefficient (β)	t-value	Sig.
Constant	1.245	–	–
Banking Digitalization (X_1)	0.384	5.672	0.000
Productive Credit Distribution (X_2)	0.427	6.215	0.000

Tabel 3. Multiple Linear Regression Results

Variable	Minimum	Maximum	Mean	Standard Deviation
Banking Digitalization (X_1)	2.80	5.00	4.12	0.61
Productive Credit Distribution (X_2)	2.60	5.00	4.05	0.58
MSME Performance (Y)	2.90	5.00	4.18	0.63

Table 2 indicates that all variables achieved mean scores above **4.00**, suggesting that the levels of banking digitalization, productive credit utilization, and MSME performance were generally classified as high.

The estimated regression equation is:

$$\mathbf{Y = 1.245 + 0.384X_1 + 0.427X_2}$$

The results indicate that both banking digitalization and productive credit distribution have positive effects on MSME performance.

Tabel 4. Simultaneous Significance Test (F-test)

R Square	F value	Sig.
0,685	48,371	0,000

The coefficient of determination (**R^2 = 0.685**) indicates that banking digitalization and productive credit distribution jointly explain **68.5%** of the variation in MSME performance, while the remaining **31.5%** is explained by other factors outside the scope of this study.

Discussion

The Effect of Banking Digitalization on MSME Performance

The findings reveal that banking digitalization has a positive and statistically significant effect on MSME performance, with a regression coefficient of 0.384 and a significance level of 0.000. This result indicates that greater utilization of digital banking services leads to improved MSME performance. Banking digitalization provides substantial benefits for business owners by facilitating financial transactions, electronic payments, fund transfers, transaction recording, and online financing applications.

In today's digital economy, speed and efficiency have become essential determinants of business competitiveness. MSMEs utilizing mobile banking, internet banking, QRIS, and other digital financial services demonstrate greater capability in managing business cash flow. Furthermore, banking digitalization reduces transaction costs, minimizes the risks associated with cash handling, and enhances the accuracy of financial records. These improvements ultimately increase business productivity and operational efficiency.

These findings are consistent with the Technology Acceptance Model (TAM), which suggests that perceived usefulness and perceived ease of use encourage individuals to adopt new technologies. Within the MSME context, the convenience of digital banking services motivates entrepreneurs to integrate technology into their business operations, thereby improving overall business performance.

The Effect of Productive Credit Distribution on MSME Performance

The results demonstrate that productive credit distribution has a positive and statistically significant effect on MSME performance, with a regression coefficient of 0.427 and a significance level of 0.000. Since this coefficient is higher than that of banking digitalization, productive credit emerges as the most influential factor affecting MSME performance.

Productive credit provides additional working capital that enables business owners to increase production capacity, expand marketing networks, purchase modern production equipment, and recruit additional employees. Adequate financing strengthens MSMEs' ability to expand their operations and increase production output.

Many respondents acknowledged that access to the People's Business Credit (Kredit Usaha Rakyat/KUR) program and other productive financing schemes significantly increased their business turnover. Before obtaining credit, many MSMEs experienced capital constraints that limited business growth. After receiving financing, however, they were able to enhance production capacity and expand their market coverage.

These findings support the Financial Intermediation Theory, which emphasizes the role of banking institutions as intermediaries between surplus and deficit units. Effective productive credit distribution stimulates economic activity and enhances productivity within the MSME sector.

The Simultaneous Effect of Banking Digitalization and Productive Credit Distribution on MSME Performance

The simultaneous test results indicate that banking digitalization and productive credit distribution jointly exert a significant influence on MSME performance, with an F-value of 48.371

and a significance level of 0.000. The coefficient of determination (68.5%) demonstrates that these two variables collectively make a substantial contribution to explaining variations in MSME performance. These findings indicate that MSME success in the digital era depends not only on access to financial capital but also on entrepreneurs' ability to utilize modern digital financial technologies. Productive credit provides the financial resources necessary for business expansion, whereas banking digitalization enhances the efficiency and effectiveness of financial management. The combination of these two factors creates a synergistic effect that supports sustainable business growth. Therefore, strengthening the digital banking ecosystem and expanding access to productive credit should become key priorities for both the government and banking institutions. Enhancing digital literacy and financial literacy among MSME owners is equally important to ensure optimal utilization of financial services. Continued improvements in these areas will enable Indonesian MSMEs to become more competitive, expand their market reach, and contribute more substantially to sustainable national economic growth.

4. CONCLUSION

This study demonstrates that banking digitalization and productive credit distribution have positive and statistically significant effects on the performance of Indonesian MSMEs during the 2023–2026 period. Banking digitalization improves access to financial services, enhances transaction efficiency, accelerates payment processes, and supports more modern business management practices. Meanwhile, productive credit serves as an essential source of capital, enabling MSMEs to increase production capacity, expand market reach, and improve business income. The empirical results indicate that banking digitalization contributes 38.4%, while productive credit contributes 42.7% to improvements in MSME performance. Collectively, both variables explain 68.5% of the variation in MSME performance. These findings suggest that successful MSME development depends not only on the availability of financial capital but also on entrepreneurs' ability to effectively utilize digital banking technologies.

The practical implications of this study highlight the importance of strengthening digital literacy and financial literacy programs for MSME owners. Banking institutions should continue developing more inclusive and user-friendly digital financial services that are accessible to all segments of society. Furthermore, the government should expand access to productive credit through policies that support the long-term sustainability of micro and small enterprises. By fostering synergy between banking digitalization and productive credit optimization, Indonesian MSMEs can become more competitive, innovative, and sustainable in addressing future challenges within the digital economy.

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