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DIGITAL PAYMENTS AND MSMES' FINANCIAL PROFILES FOR BANK FINANCING

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Abstract: Although the adoption of digital payment systems among Indonesian Micro, Small, and Medium Enterprises (MSMEs) has grown rapidly, access to formal bank financing remains relatively limited. Previous studies have primarily examined the direct effects of digital payments on business performance or financial inclusion, while the mechanism through which digital transactions improve financing access has received limited empirical attention. This study aims to examine the mediating role of MSMEs' Financial Profile in the relationship between digital payment adoption and access to bank financing. A quantitative explanatory research design was employed using data collected from 100 MSMEs in Aceh Province, Indonesia. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that digital payments have a positive and significant effect on MSMEs' Financial Profile ($\beta = 0.512$, $p < 0.001$), while MSMEs' Financial Profile positively influences access to bank financing ($\beta = 0.487$, $p = 0.001$). Furthermore, MSMEs' Financial Profile partially mediates the relationship between digital payments and bank financing access ($\beta = 0.249$, $p < 0.001$; VAF = 53.8%). These findings suggest that the contribution of digital payments to financing accessibility is primarily realized through the development of credible and verifiable financial information. This study contributes to the literature by conceptualizing MSMEs' Financial Profile as an empirically measurable mediating construct and proposing the Digital Financial Signaling Mechanism, which explains how digital transaction footprints are transformed into bankable financial information that supports credit assessment. The findings provide practical implications for banks, policymakers, and fintech providers in developing transaction-based alternative credit scoring models to expand financial inclusion for MSMEs.
Keywords: Digital Payments; MSMEs' Financial Profile; Bank Financing Access; Financial Inclusion; Digital Financial Footprint.

Abstrak:. Meskipun adopsi pembayaran digital di kalangan Usaha Mikro, Kecil, dan Menengah (UMKM) di Indonesia meningkat pesat, akses terhadap pembiayaan perbankan formal masih relatif terbatas. Penelitian terdahulu umumnya berfokus pada pengaruh langsung pembayaran digital terhadap kinerja usaha atau inklusi keuangan, sementara mekanisme yang menjelaskan bagaimana transaksi digital meningkatkan akses pembiayaan masih belum banyak dikaji. Penelitian ini bertujuan menganalisis peran mediasi profil keuangan UMKM dalam hubungan

antara penggunaan pembayaran digital dan akses pembiayaan perbankan. Penelitian menggunakan pendekatan kuantitatif dengan desain explanatory research terhadap 100 pelaku UMKM di Provinsi Aceh. Data dianalisis menggunakan Structural Equation Modeling–Partial Least Squares (SEM-PLS). Hasil penelitian menunjukkan bahwa pembayaran digital berpengaruh positif terhadap profil keuangan UMKM (β = 0,512; p < 0,001), sedangkan profil keuangan berpengaruh positif terhadap akses pembiayaan perbankan (β = 0,487; p = 0,001). Profil keuangan juga terbukti memediasi secara parsial hubungan antara pembayaran digital dan akses pembiayaan (β = 0,249; p < 0,001; VAF = 53,8%). Temuan ini menunjukkan bahwa manfaat pembayaran digital terhadap akses pembiayaan terutama diwujudkan melalui pembentukan informasi keuangan yang kredibel dan dapat diverifikasi. Penelitian ini berkontribusi dengan mengonseptualisasikan profil keuangan UMKM sebagai variabel mediasi yang terukur secara empiris serta mengusulkan Digital Financial Signaling Mechanism sebagai mekanisme yang menjelaskan transformasi jejak transaksi digital menjadi informasi keuangan yang mendukung penilaian kredit. Temuan ini memberikan implikasi bagi perbankan, regulator, dan penyedia fintech dalam mengembangkan model alternative credit scoring berbasis data transaksi digital.

Kata Kunci: Pembayaran digital; profil keuangan UMKM; akses pembiayaan perbankan; alternative credit scoring.

Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in Indonesia's economic development, contributing approximately 61% of the national Gross Domestic Product (GDP) and employing nearly 97% of the country's workforce (Bank Indonesia, 2025; Kementerian Koordinator Bidang Perekonomian Republik Indonesia). Despite their substantial economic contribution, MSMEs continue to experience limited access to formal financial services. The (International Finance Corporation (2024) estimates that Indonesia's MSME financing gap has reached approximately US$234 billion, while the national formal credit gap exceeds IDR 2,740 trillion (Linkumkm.id.). This imbalance highlights a persistent paradox: although MSMEs constitute the backbone of the national economy, many remain excluded from formal banking systems because they are unable to provide reliable financial information required for credit assessment.

At the same time, Indonesia has experienced remarkable growth in digital payment adoption. By the first quarter of 2025, more than 38 million MSMEs had adopted the Indonesian Standard Quick Response Code (QRIS), and the number continued to increase throughout the first half of the year, reaching nearly 57 million users and 39.3 million merchants, 93.16% of whom were MSMEs. During the same period, QRIS transaction values exceeded IDR 579 trillion, reflecting the rapid digitalization of business transactions across the country (Bank Indonesia, 2024). Nevertheless, this impressive digital transformation has not translated into proportional improvements in access to formal financing. Bank Indonesiareported that MSME credit grew by only 1.95% year-on-year in March 2025, substantially lower than the growth observed during the COVID-19 pandemic. The coexistence of widespread digital payment adoption and stagnant bank lending suggests that digital transaction data have not yet been effectively utilized to reduce financing constraints faced by MSMEs.This phenomenon can be understood through the lens of Asymmetric Information Theory. Agarwal & Hauswald, (2010) argue that lenders frequently ration credit because borrowers possess private information that cannot be fully observed or verified. Such information asymmetry is particularly severe among MSMEs operating in the informal sector, where standardized financial statements, audited reports, and established credit histories are often unavailable (Seth & Jaiswal, 2024). Complementing this perspective, Signaling Theory suggests that information asymmetry can be reduced when better-informed parties transmit credible signals to less-informed parties (Huang et al., 2021). In the context of digital finance, every transaction recorded through QRIS, electronic wallets, or mobile banking creates a digital footprint that provides objective evidence of business activities.

As these records accumulate over time, they offer valuable information regarding transaction behavior, cash flow patterns, and financial discipline. (Berg et al., 2020) further demonstrate that digital footprint variables can predict credit risk as effectively as, and in some cases more accurately than, traditional credit bureau scores, indicating their considerable potential for alternative credit assessment.

Although digital payments have attracted increasing scholarly attention, existing studies have predominantly focused on their direct effects on business performance, operational efficiency, or financial inclusion. (Ramadhan & Salsabila, 2026), for example, found that QRIS adoption positively affects MSMEs' financial performance but did not explain how digital transactions contribute to the development of credible financial information. Similarly, (Zakariya & Arifin, 2025) emphasized improvements in transaction efficiency resulting from digital payment adoption without examining the formation of financial records. Other studies have reported that integrating digital payments with financial inclusion enhances business performance (Xu et al., 2026), while Fitriani et al., (2026) investigated factors influencing QRIS adoption among culinary MSMEs. Collectively, these studies conceptualize digital payment adoption as a direct antecedent of organizational outcomes, overlooking the underlying mechanism through which digital transaction behavior becomes valuable financial information for lending decisions.

This omission represents a significant theoretical and empirical gap. Repeated digital transactions generate transaction histories, improve cash flow visibility, and enhance financial traceability. Together, these elements gradually form a comprehensive financial profile that can serve as an alternative source of credit information for financial institutions. Despite its strategic importance, the concept of a financial profile has rarely been operationalized as a distinct and measurable construct within the digital finance literature. Instead, previous studies have largely treated it as an implicit component of financial inclusion or ignored it altogether. Consequently, the mechanism through which digital payment adoption translates into improved financing opportunities remains insufficiently understood.

Addressing this gap, the present study proposes MSMEs' Financial Profile as a mediating construct linking digital payment usage and access to bank financing. Unlike previous studies that emphasize only the direct relationship between digital payments and business outcomes, this study argues that digital payments improve financing accessibility primarily because they generate reliable financial information that reduces information asymmetry between MSMEs and banks. By integrating Asymmetric Information Theory, Signaling Theory, and the concept of digital financial footprints, this study develops a more comprehensive framework for explaining how digital transaction behavior contributes to alternative credit assessment in developing economies.

Accordingly, this study addresses three research questions: (1) Does digital payment usage improve MSMEs' financial profiles? (2) Do stronger financial profiles increase access to bank financing? (3) Does the financial profile mediate the relationship between digital payment usage and bank financing access? To answer these questions, this study examines the direct effect of digital payments on financial profiles, the influence of financial profiles on financing accessibility, and the mediating role of financial profiles in explaining the relationship between digital payment usage and bank financing.

This study contributes to the literature in several ways. Theoretically, it extends existing research by conceptualizing the financial profile as an empirically measurable mediating construct rather than merely a proxy for financial inclusion. Furthermore, it integrates theories of information asymmetry and signaling with digital financial footprint literature to explain alternative credit assessment for MSMEs. Practically, the findings provide insights for MSME owners regarding the strategic value of consistent digital payment utilization in building

credible financial records. The results also offer implications for banks in developing transaction-based credit assessment models, for policymakers—particularly the Financial Services Authority (Otoritas Jasa Keuangan, OJK) and Bank Indonesia—in strengthening interoperability between digital payment systems and credit information infrastructures, and for fintech providers seeking to develop innovative transaction-based credit scoring services.

Finally, based on the proposed theoretical framework, this study develops a structural model in which MSMEs' Financial Profile mediates the relationship between Digital Payments and Bank Financing Access. Accordingly, three hypotheses are proposed: H1, digital payment usage positively influences MSMEs' financial profiles; H2, MSMEs' financial profiles positively influence bank financing access; and H3, MSMEs' financial profiles mediate the relationship between digital payment usage and bank financing access. The proposed research model is presented in Figure 1.

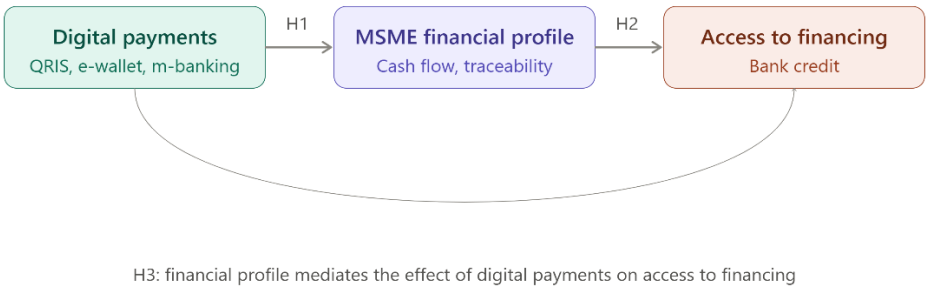


Figure 1 illustrates the proposed research model. H1 posits that Digital Payments positively influence MSMEs' Financial Profile, H2 proposes that MSMEs' Financial Profile positively influences Bank Financing Access, and H3 examines the mediating role of MSMEs' Financial Profile in the relationship between Digital Payments and Bank Financing Access.

Methods

This study employed a quantitative approach with an explanatory research design to examine the causal relationships among digital payment usage, MSMEs' financial profiles, and access to bank financing. A cross-sectional survey was conducted between January and March 2026 involving micro, small, and medium enterprises (MSMEs) operating in three major business clusters in Aceh Province, Indonesia, namely the Lampisang Culinary Center (Aceh Besar Regency), the Tsunami PLTD Apung Souvenir Center (Banda Aceh City), and the Sabang Marine Tourism Area. These locations were purposively selected because they represent tourism-based MSME clusters with relatively high adoption of digital payment systems, making them appropriate settings for examining the role of digital transactions in developing financial profiles and improving financing accessibility.

The study population comprised all MSMEs operating within the three business clusters. Respondents were selected using proportionate purposive sampling, ensuring proportional representation from each location while applying predetermined inclusion criteria. Eligible respondents were business owners or managers who had actively operated their businesses for at least one year and had implemented at least one digital payment instrument, such as QRIS, electronic wallets, or mobile banking, in their daily business transactions. Based on these criteria, a total of 100 MSMEs participated in the study. This sample size satisfies the minimum recommendation for Partial Least Squares Structural Equation Modeling (PLS-SEM) and is considered adequate for estimating mediation models with relatively simple structural relationships(Hair et al., 2022).

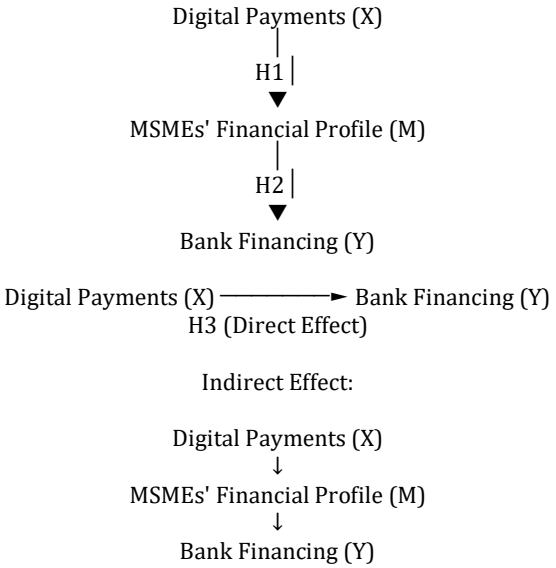
Primary data were collected through structured questionnaires using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The research model consists of three latent variables. Digital Payments (X) represent the intensity of digital payment utilization in business activities. MSMEs' Financial Profile (M) reflects the quality of financial recording, cash-flow visibility, and transaction traceability generated through digital payment activities. Bank Financing Access (Y) represents the perceived accessibility of formal financing obtained from banking institutions. The operational definitions of each construct are presented in Table 1.

Table 1. Operational Definition of Research Variables

Variable	Dimensions	Indicators	References
Digital Payments (X)	Digital payment utilization	Frequency of digital transactions; consistency of digital payment usage; proportion of digital transactions; diversity of digital payment instruments	Wardhani et al. (2023); Zakariya & Arifin (2025)
MSMEs' Financial Profile (M)	Financial recording, cash-flow visibility, financial traceability	Transaction recording; income and expenditure recording; cash-flow monitoring; transaction traceability; accessibility of financial information	Berg et al. (2020); adapted from MSME financial management literature
Bank Financing Access (Y)	Accessibility of formal financing	Ease of obtaining financing; ease of fulfilling financing requirements; financing approval opportunity; adequacy of financing received	Beck & Demirgüç-Kunt (2006)

The conceptual model examined in this study is presented in Figure 1.

Figure 1. Proposed Structural Research Model



Hypotheses

H1: Digital Payments positively influence MSMEs' Financial Profile.

H2: MSMEs' Financial Profile positively influences Bank Financing Access.

H3: MSMEs' Financial Profile mediates the relationship between Digital Payments and Bank Financing Access.

Before hypothesis testing, the measurement model (outer model) was evaluated to assess construct validity and reliability. Convergent validity was assessed using outer loadings (>0.70) and Average Variance Extracted (AVE >0.50). Internal consistency reliability was evaluated using Composite Reliability and Cronbach's Alpha with minimum acceptable values of 0.70. Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT <0.90), following the recommendations of (Fornell & Larcker, 1984; Joseph F Hair, Barry J. Babin, Rolph E. Anderson, 2022).
The structural model (inner model) was subsequently evaluated using path coefficients, coefficients of determination (R^2), effect size (f^2), and predictive relevance (Q^2). Hypotheses were tested using the bootstrapping procedure with 5,000 resamples to estimate the significance of both direct and indirect effects based on t-statistics, p-values, and bias-corrected confidence intervals. Data analysis was performed using SmartPLS 4, which is widely recommended for prediction-oriented structural models involving latent constructs and mediation analysis (Hair et al., 2022).

Participation in this study was entirely voluntary. Prior to completing the questionnaire, respondents received information regarding the research objectives, confidentiality of responses, and their right to withdraw from the study at any stage without consequence. All collected data were analyzed anonymously and reported only in aggregate form to ensure respondents' privacy and confidentiality.

Results And Discussions
A total of 100 MSME owners participated in this study, representing three major business clusters in Aceh Province. Of the total respondents, 30 were from the Lampisang Culinary Center (Aceh Besar Regency), 30 from the Tsunami PLTD Apung Souvenir Center (Banda Aceh City), and 40 from the Sabang Marine Tourism Area. The demographic characteristics of the respondents are presented in Table 2.

Tabel 2. Profil Demografis Responden

Characteristics	Category	Frequency (n)	Percentage (%)
Business Location	Lampisang Culinary Center	30	30.0
	Tsunami PLTD Apung Souvenir Center	30	30.0
	Sabang Marine Tourism Area	40	40.0
Business Sector	Culinary/Food and Beverage	42	42.0
	Souvenir and Handicrafts	31	31.0
	Marine Tourism Services	27	27.0
Business Age	Less than 1 year	12	12.0
	1–3 years	38	38.0
	3–5 years	29	29.0
	More than 5 years	21	21.0
Business Scale	Micro Enterprise	61	61.0
	Small Enterprise	30	30.0

	Medium Enterprise	9	9.0
Digital Payment Methods Used	QRIS only	34	34.0
	QRIS + E-wallet	41	41.0
	QRIS + E-wallet + Mobile Banking	25	25.0

Measurement Model Assessment (Outer Model)

The measurement model was evaluated to assess the convergent validity, discriminant validity, and reliability of the latent constructs. Convergent validity was examined using indicator loadings, Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's alpha. The results are presented in Table 3.

Table 3. Results of Convergent Validity and Reliability Assessment

Construct	**Indicator**	**Outer Loading**	**AVE**	**Composite Reliability**	**Cronbach's Alpha**
Digital Payments (X)	X1 (QRIS)	0.842	0.671	0.860	0.761
	X2 (E-wallet)	0.798			
	X3 (Mobile Banking)	0.815			
MSMEs' Financial Profile (M)	M1–M11	0.712–0.881	0.624	0.943	0.932
Bank Financing Access (Y)	Y1–Y7	0.733–0.869	0.658	0.922	0.903

As shown in Table 2, all indicator loadings exceeded the recommended threshold of 0.70, indicating satisfactory indicator reliability. Furthermore, the AVE values for all constructs were greater than 0.50, confirming adequate convergent validity. The Composite Reliability and Cronbach's alpha values also exceeded the recommended minimum value of 0.70, demonstrating satisfactory internal consistency and construct reliability (Hair et al., 2022).
Discriminant validity was subsequently evaluated using the Fornell–Larcker criterion, and the results are presented in Table 4.

Table 4. Discriminant Validity Assessment Using the Fornell–Larcker Criterion

Construct	**Digital Payments**	**MSMEs' Financial Profile**	**Bank Financing Access**
Digital Payments	0.819		
MSMEs' Financial Profile	0.512	0.790	
Bank Financing Access	0.468	0.647	0.811

The square root of the AVE (diagonal elements) for each construct was greater than its correlations with other constructs, indicating that each construct possessed adequate discriminant validity. Therefore, the measurement model satisfied the recommended validity and reliability criteria for subsequent structural model analysis.

Structural Model Assessment (Inner Model)
Following the evaluation of the measurement model, the structural model was assessed by examining the coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2). The results are summarized in Table 5.

Tabel 5. Hasil R^2, Q^2, dan f^2

Endogenous Construct	**R^2**	**Q^2**	**Interpretation**
MSMEs' Financial Profile	0.262	0.171	Moderate
Bank Financing Access	0.441	0.289	Moderate

Structural Relationship	f^2	**Interpretation**
Digital Payments → MSMEs' Financial Profile	0.354	Large
MSMEs' Financial Profile → Bank Financing Access	0.297	Medium
Digital Payments → Bank Financing Access	0.081	Small

The results indicate that Digital Payments explained 26.2% of the variance in MSMEs' Financial Profile, while Digital Payments and MSMEs' Financial Profile jointly explained 44.1% of the variance in Bank Financing Access. The positive Q^2 values indicate that the structural model possesses satisfactory predictive relevance. Regarding effect size, Digital Payments exerted a large effect on MSMEs' Financial Profile ($f^2 = 0.354$), whereas MSMEs' Financial Profile had a medium effect on Bank Financing Access ($f^2 = 0.297$). In contrast, the direct effect of Digital Payments on Bank Financing Access was relatively small ($f^2 = 0.081$), suggesting that part of its influence may be transmitted indirectly through MSMEs' Financial Profile.

The results of the hypothesis testing based on path coefficients, t-statistics, and p-values are presented in Table 6.

Table 6. Results of Direct Effects Hypothesis Testing

Hypothesis	**Structural Relationship**	**Path Coefficient (β)**	**t-Statistic**	**p-Value**
H1	Digital Payments → MSMEs' Financial Profile	0.512	6.847	<0.001
H2	MSMEs' Financial Profile → Bank Financing Access	0.487	5.932	0.001
H3a*	Digital Payments → Bank Financing Access (Direct Effect)	0.214	2.318	0.021

*H3a represents the direct effect component used as the basis for evaluating the mediating effect of MSMEs' Financial Profile in the subsequent mediation analysis.

Mediation Analysis

The mediating role of MSMEs' Financial Profile in the relationship between Digital Payments and Bank Financing Access was examined using the bootstrapping procedure with 5,000 resamples. The results of the indirect effect analysis are presented in Table 7.

Table 7. Results of the Mediation Analysis

Hypothesis	Structural Relationship	Indirect Effect	t-Statistic	p-Value	95% Bias-Corrected Confidence Interval
H3	Digital Payments → MSMEs' Financial Profile → Bank Financing Access	0.249	4.672	<0.001	[0.142, 0.368]

The indirect effect of Digital Payments on Bank Financing Access through MSMEs' Financial Profile was positive and statistically significant ($\beta = 0.249$, $p < 0.001$). The total effect, combining both direct and indirect effects, was 0.463 (0.214 + 0.249). Furthermore, the Variance Accounted For (VAF) reached 53.8%, indicating partial mediation, as more than half of the total effect was transmitted through the mediating construct.

Summary of Hypothesis Testing

The overall results of hypothesis testing are summarized in Table 8.

Table 8. Summary of Hypothesis Testing

Hypothesis	Statement	Coefficient	p-Value	Decision
H1	Digital Payments positively influence MSMEs' Financial Profile.	0.512	<0.001	Supported
H2	MSMEs' Financial Profile positively influences Bank Financing Access.	0.487	0.001	Supported
H3	MSMEs' Financial Profile mediates the relationship between Digital Payments and Bank Financing Access.	0.249	<0.001	Supported

The findings demonstrate that Digital Payments have a positive and significant effect on MSMEs' Financial Profile ($\beta = 0.512$, $p < 0.001$), suggesting that greater utilization of digital payment systems contributes to the development of more reliable and structured financial records among MSMEs. This finding supports Digital Financial Capability Theory, which argues that the effective use of digital financial services enhances individuals' and businesses' ability to manage, organize, and document their financial activities (Samosir et al., 2026). It is also consistent with the Technology Acceptance Model (TAM) (Davis, 1989), whereby technologies perceived as useful and easy to use are more likely to be adopted continuously. In this context, the routine use of QRIS, electronic wallets, and mobile banking naturally generates consistent transaction records that improve financial transparency. While (Wardhani et al., 2023) reported that QRIS adoption improves MSMEs' financial performance, the present study extends their findings by demonstrating that the primary contribution of digital payments lies in establishing a verifiable financial profile rather than merely improving operational efficiency.

The results further reveal that MSMEs' Financial Profile significantly enhances Bank Financing Access ($\beta = 0.487$, $p = 0.001$). This finding provides empirical support for Signaling Theory (Connelly et al., 2025) and Asymmetric Information Theory (Davis et al., 2021), which propose that credible financial information reduces uncertainty in lending decisions. MSMEs capable of presenting transparent transaction histories, consistent cash flow records, and verifiable financial information effectively signal their financial credibility to banks, thereby reducing information asymmetry that often constrains lending to informal businesses. This result also

aligns with the growing literature on alternative data-based lending, particularly the work of (Berg et al., 2020), who demonstrated that digital footprint data can predict credit risk with accuracy comparable to conventional credit bureau information. Consequently, digital transaction records should be viewed not merely as administrative documentation but as economically valuable information capable of supporting objective credit evaluation.
More importantly, the mediation analysis confirms that the relationship between Digital Payments and Bank Financing Access operates primarily through the development of MSMEs' Financial Profile. The significant indirect effect ($\beta = 0.249$, $p < 0.001$) and VAF of 53.8% indicate that digital payment adoption does not automatically improve financing opportunities. Instead, digital payments first generate digital footprints, which gradually accumulate into structured, verifiable, and transparent financial information. These transaction records subsequently evolve into a comprehensive financial profile that financial institutions can use to assess borrowers' creditworthiness more objectively. This sequential mechanism—from digital footprint, to bankable financial data, and ultimately to creditworthiness—provides a more comprehensive explanation of how digital finance contributes to financial inclusion than the direct-effect models commonly reported in previous studies.

This mechanism differs fundamentally from conventional lending practices involving MSMEs with limited digital transaction records. Traditionally, banks rely heavily on manually prepared financial statements, collateral, and long-term customer relationships when evaluating loan applications. Such approaches are often time-consuming, susceptible to subjective judgment, and disadvantage micro and informal enterprises lacking formal financial documentation. In contrast, digital payment systems continuously generate standardized transaction data that accelerate the accumulation of credible financial information. This process effectively creates what may be described as signal acceleration, enabling MSMEs to establish financial credibility within a much shorter period than would be possible through conventional banking relationships.

From a theoretical perspective, this study contributes to the digital financial inclusion literature by conceptualizing MSMEs' Financial Profile as an empirically measurable mediating construct rather than treating it merely as a proxy for financial inclusion. By integrating Digital Financial Capability Theory, Signaling Theory, and Asymmetric Information Theory into a single structural framework, this study provides a more comprehensive explanation of how digital payment adoption translates into improved access to formal financing. The proposed framework also enriches the literature on alternative credit scoring by emphasizing behavioral transaction data instead of relying solely on algorithmic or big-data approaches that dominate existing research.

From a practical perspective, the findings suggest that consistent use of digital payment systems should be regarded as a long-term strategy for MSMEs to establish credible financial records rather than merely as a tool for improving transaction efficiency. For banks and fintech companies, the results highlight the potential of transaction-based credit scoring models to complement or even substitute traditional lending assessments, particularly for thin-file MSMEs with limited formal financial documentation. For policymakers, especially the Financial Services Authority (OJK) and Bank Indonesia, the findings provide empirical support for policies promoting interoperability between digital payment infrastructures and national credit information systems. Strengthening such integration would enable digital transaction data to serve as a strategic instrument for expanding financial inclusion and improving credit accessibility for underserved MSMEs.

Conclusion

This study demonstrates that digital payment adoption contributes significantly to improving MSMEs' access to formal bank financing through the development of a credible financial profile.

The empirical findings confirm that consistent use of digital payment systems enhances the quality of MSMEs' financial profiles by generating structured, transparent, and verifiable transaction records. In turn, a stronger financial profile significantly increases access to bank financing, indicating that financial institutions increasingly value reliable transaction-based information when evaluating the creditworthiness of MSMEs. More importantly, the mediation analysis reveals that the effect of digital payments on financing access is not entirely direct but operates substantially through the development of MSMEs' financial profiles. These findings provide empirical evidence that the three research questions proposed in this study have been addressed and support the theoretical arguments derived from Asymmetric Information Theory, Signaling Theory, and Digital Financial Capability Theory.

Beyond confirming the proposed hypotheses, this study contributes to the literature by conceptualizing MSMEs' Financial Profile as a measurable mediating construct that explains how digital payment adoption is translated into improved financing opportunities. Unlike previous studies that primarily examined the direct relationship between digital payments and business performance or financial inclusion, this study demonstrates that the value of digital payment systems lies in their ability to generate digital financial footprints, which gradually evolve into bankable financial information capable of reducing information asymmetry between MSMEs and financial institutions. Accordingly, this study proposes a Digital Financial Signaling Mechanism, in which digital transaction records are transformed into credible financial signals that support more objective credit assessments and ultimately improve access to formal financing. This mechanism provides a more comprehensive explanation of how digital payment ecosystems can promote financial inclusion among MSMEs, particularly in developing economies where informal business practices remain prevalent.

Despite these contributions, several limitations should be acknowledged. First, the study was conducted exclusively among MSMEs located in three business clusters in Aceh Province, limiting the generalizability of the findings to other regions with different economic structures, levels of digital literacy, and financial infrastructure. Second, the cross-sectional research design captures relationships at a single point in time and therefore cannot fully explain the dynamic evolution of financial profiles or financing accessibility. Third, because all variables were measured using self-reported questionnaires completed by the same respondents, the results may be subject to common method bias despite the statistical robustness of the structural model.

Future research is therefore encouraged to employ longitudinal research designs to examine how digital financial profiles develop over time and how they influence financing decisions across different stages of business growth. Expanding the geographical scope and conducting cross-sectoral or cross-regional comparisons would also enhance the external validity of the proposed model. Furthermore, future studies may incorporate moderating variables such as digital financial literacy, institutional support, firm size, or entrepreneurial experience to identify conditions under which digital payment adoption most effectively improves financing accessibility. Finally, integrating objective transactional data obtained directly from digital payment providers or financial institutions would strengthen causal inference and provide a more comprehensive understanding of transaction-based alternative credit assessment for MSMEs.

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