

The Mediating Role of Fintech Adoption in the Relationship between Financial Literacy, Digital Literacy, and MSMEs' Financial Performance

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ABSTRACT

Purpose — This study investigates whether fintech adoption acts as a mediating mechanism in linking financial literacy and digital literacy to the financial performance of MSMEs.

Design/Methodology/Approach — A quantitative survey was conducted involving 400 MSME owners and managers in Banten Province, Indonesia. Data were analyzed using PLS-SEM to examine both direct and indirect relationships among constructs.

Findings/Results — The findings indicate that financial literacy did not significantly improve financial performance directly ($\beta = 0.083$; $p = 0.225$). In contrast, digital literacy positively influenced financial performance ($\beta = 0.241$; $p < 0.001$). Both financial literacy ($\beta = 0.318$; $p < 0.001$) and digital literacy ($\beta = 0.354$; $p < 0.001$) significantly increased fintech adoption. Fintech adoption also had a significant positive impact on financial performance ($\beta = 0.401$; $p < 0.001$). Mediation testing confirmed that fintech fully mediated the financial literacy–performance relationship and partially mediated the digital literacy–performance relationship.

Originality/Value — This study highlights fintech adoption as a strategic mechanism that transforms literacy capabilities into measurable financial outcomes, extending the understanding of MSME performance in emerging digital economies.

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1. Introduction

Indonesia has experienced remarkable growth in its digital economy during the last decade. Rapid expansion of digital payment systems, electronic banking, peer-to-peer lending, and other financial technologies has transformed the business environment, particularly for Micro, Small, and Medium Enterprises (MSMEs). This transformation creates opportunities for improving business efficiency, expanding financial inclusion, and strengthening financial management practices. Nevertheless, improvements in technological infrastructure have not always been accompanied by equivalent improvements in MSMEs' financial performance. Many enterprises continue to experience difficulties in maintaining profitability, managing cash flow, and sustaining business growth despite increasing access to digital financial services (Limanseto, 2022; UKM, 2023).

The persistence of these challenges suggests that technological availability alone is insufficient to improve business outcomes. Numerous MSMEs continue to encounter operational problems related to budgeting, financial planning, transaction recording, and investment decision-making. Weak financial management frequently results in inefficient resource allocation and limited business competitiveness, particularly in increasingly dynamic digital markets (Dewi et al., 2021; Suhayati, 2024). Consequently, understanding the organizational capabilities that enable MSMEs to transform digital opportunities into financial performance has become an important research agenda.

Among the internal capabilities frequently discussed in entrepreneurship and accounting literature, financial literacy occupies a central position. Business owners who possess stronger financial capability generally demonstrate greater competence in interpreting financial information, evaluating financing alternatives, controlling operational expenditures, and planning long-term investments (Leatemala, 2023; Ye & Kulathunga, 2019). Such competencies are expected to improve managerial decision quality and subsequently enhance organizational performance. However, empirical findings remain inconclusive. While several studies report a positive relationship between financial literacy and business performance (Hutahayan, 2021; Rahim & Balan, 2020), other evidence suggests that financial knowledge alone does not necessarily translate into superior financial outcomes because implementation capability varies considerably across MSMEs (Keuangan, 2024; OECD, 2023).

Alongside financial capability, digital literacy has emerged as another strategic resource in contemporary business environments. Digital literacy extends beyond the ability to operate digital devices; it encompasses the capability to access information, evaluate digital content, utilize technology efficiently, and integrate digital resources into managerial activities (A. J. A. M. Van Deursen & Van Dijk, 2010; Zahoor et al., 2023). For MSMEs, these competencies facilitate digital bookkeeping, electronic payments, cloud-based accounting systems, and real-time financial monitoring. Firms with stronger digital capability are therefore expected to respond more effectively to changing market conditions and improve organizational performance (Guo et al., 2020; Rosyidiana & Narsa, 2024). Nevertheless, substantial variation

in digital capability among MSMEs indicates that digital transformation remains uneven, particularly in developing economies.

The growing diffusion of financial technology (fintech) introduces another dimension to this issue. Fintech applications increasingly support payment processing, financing, investment management, and financial reporting, allowing MSMEs to conduct financial activities efficiently. Previous studies have consistently reported positive associations between fintech utilization and firm performance because fintech reduces transaction costs, improves financial transparency, and facilitates access to external financing (Demirgüç-Kunt & Klapper, 2020; Lee, 2021). Despite these findings, fintech has predominantly been examined as an independent technological determinant rather than as an organizational mechanism through which managerial capabilities create value (Gunawan et al., 2023; Wahyundaru et al., 2024a). This perspective reveals an important theoretical gap in the literature. Existing studies have largely investigated financial literacy, digital literacy, and fintech adoption as separate predictors of financial performance. Limited attention has been devoted to understanding how financial and digital capabilities are transformed into measurable financial outcomes. From the perspective of Accounting Capability Theory, financial and digital literacy represent strategic organizational capabilities that improve managerial decision-making. Nevertheless, the Technology Adoption Theory suggests that these capabilities are unlikely to generate competitive advantages unless they facilitate effective technology utilization. Consequently, fintech adoption may function as an operational bridge that converts managerial capabilities into better organizational performance.

Addressing this issue is particularly relevant for Indonesian MSMEs, where digital financial infrastructure has expanded rapidly, while managerial capability remains highly heterogeneous. Understanding the mechanism through which fintech adoption connects financial literacy and digital literacy with financial performance may provide more comprehensive insight into MSME digital transformation than examining direct relationships alone.

Accordingly, this study investigates the mediating role of fintech adoption in the relationships between financial literacy, digital literacy, and MSMEs' financial performance in Banten Province, Indonesia. By integrating Accounting Capability Theory with Technology Adoption Theory into a single analytical framework, this study contributes to the growing literature on MSME digital transformation. More importantly, it positions fintech adoption as a capability transformation mechanism that enables internal managerial resources to produce measurable improvements in financial performance, thereby extending the existing theoretical and empirical understanding of technology-enabled business capability development.

2. Literature Review and Hypothesis Development

Accounting Capability Theory

Accounting Capability Theory argues that organizational performance is influenced not only by the availability of accounting information but also by an organization's capability to

transform financial information into strategic managerial actions. Accounting capability encompasses the ability to generate, interpret, and utilize accounting information to support planning, control, resource allocation, and performance evaluation. This perspective is consistent with the Resource-Based View (RBV), which considers organizational capabilities as strategic resources capable of creating sustainable competitive advantage when they are valuable, rare, difficult to imitate, and effectively organized (Barney, 1991)

Within MSMEs, accounting capability is reflected in the owner's competence to interpret financial reports, evaluate investment alternatives, manage their cash flows, and monitor business performance. Financial literacy strengthens analytical capabilities, whereas digital literacy enhances the ability to process accounting information using digital technologies. Nevertheless, these capabilities are unlikely to generate superior financial outcomes unless they are translated into operational practices that improve managerial decision-making (Ismail & King, 2007; Nkundabanyanga et al., 2017).

Drawing on this perspective, this study argues that fintech adoption functions as an operational mechanism through which accounting capability is transformed into measurable financial performance.

Technology Organization Environment (TOE) Framework

The Technology Organization Environment (TOE) framework, introduced by Tornatzky and Fleischer (1990), explains organizational technology adoption as the result of interactions among technological, organizational, and environmental contexts. The technological context concerns the perceived characteristics and availability of technological innovation. The organizational context reflects internal resources, managerial capability, organizational readiness, and financial capacity. The environmental context includes external pressures, such as market competition, government support, customer expectations, and industry dynamics. Among MSMEs, fintech adoption represents an organizational decision shaped by the three dimensions. Financial literacy enables entrepreneurs to assess the economic value and financial implications of fintech solutions, while digital literacy improves technological readiness and reduces the operational barriers associated with digital platforms. Consequently, organizations with stronger literacy capabilities are more likely to successfully adopt fintech.

Recent empirical studies continue to validate the applicability of the TOE framework in explaining digital technology adoption among SMEs, particularly in the context of digital finance and financial technology (Awa et al., 2016; Baker, 2012; Kumar et al., 2021; Oliveira & Martins, 2011). Accordingly, the TOE framework provides an appropriate theoretical lens for explaining how internal organizational capabilities facilitate fintech adoption and ultimately improve business performance.

Financial Literacy and Financial Performance

Business performance depends largely on the quality of managerial decisions rather than the availability of financial resources. Entrepreneurs continuously make decisions regarding

pricing, financing, budgeting, inventory control and investment allocation. The effectiveness of these decisions is closely associated with their financial capability.

Financial literacy improves entrepreneurs' capacity to understand financial statements, evaluate financing alternatives, estimate business risks, and allocate financial resources efficiently (Tavares et al., 2023; Ye & Kulathunga, 2019). From the perspective of Accounting Capability Theory, stronger financial capability should enhance decision quality, resulting in improved organizational performance.

Previous empirical investigations generally report that financially literate entrepreneurs demonstrate better financial planning and superior business performance because they manage their organizational resources more efficiently (Hutahayan, 2021; Rahim & Balan, 2020). Therefore, financial literacy is expected to contribute positively to MSMEs' financial performance.

H1: Financial literacy has a positive effect on MSMEs' financial performance.

Digital Literacy and Financial Performance

Digital transformation has fundamentally changed the competitive environment in which MSMEs operate. Organizations increasingly rely on digital technologies to support operational efficiency, financial monitoring, customer interaction, and strategic planning. Consequently, the ability to utilize digital technologies has become an important organizational capability.

Digital literacy enables entrepreneurs to process information more efficiently, adopt digital business applications, and integrate technology into financial management activities (A. Van Deursen & Van Dijk, 2010). These capabilities improve decision quality by providing timely and accurate business information.

Empirical evidence indicates that organizations with stronger digital capabilities generally achieve higher productivity and better organizational performance because they adapt more effectively to technological changes (Guo et al., 2020; Zahoor et al., 2023). Accordingly, digital literacy is expected to improve MSMEs' financial performance.

H2: Digital literacy has a positive effect on MSMEs' financial performance.

Financial Literacy and Fintech Adoption

Adopting financial technology requires more than technological infrastructure; it also requires the capability to understand financial products and evaluate their potential contributions to business operations. Entrepreneurs who possess stronger financial capability generally experience less uncertainty when considering digital financial services.

Financial literacy improves entrepreneurs' confidence in evaluating financing alternatives, transaction costs, investment opportunities and financial risks associated with fintech services. Consequently, financially capable entrepreneurs are more likely to recognize fintech as a useful managerial resource.

Previous studies have demonstrated that financial literacy significantly encourages fintech utilization among small businesses because knowledgeable entrepreneurs perceive greater economic benefits from digital financial innovation (Gopalakrishnan & Agrawal, 2022; Thathsarani & Jianguo, 2022).

H3: Financial literacy has a positive effect on fintech adoption.

Digital Literacy and Fintech Adoption

Although financial understanding is important, successful fintech implementation also depends on digital capability. Entrepreneurs with stronger digital competence generally experience fewer technological barriers during adoption.

Digital literacy facilitates interactions with digital interfaces, mobile applications, cloud-based financial systems, and electronic payment platforms. Consequently, organizations possessing higher digital capability tend to perceive fintech as easier to implement and integrate into daily business operations. This argument is consistent with the Technology Adoption Theory, which emphasizes that technological readiness influences adoption decisions. Previous empirical studies similarly conclude that digital literacy is one of the strongest determinants of fintech utilization among MSMEs (Guo et al., 2020; Kumar et al., 2021).

H4: Digital literacy has a positive effect on fintech adoption.

Fintech Adoption and Financial Performance

The growing importance of fintech extends beyond transaction efficiency. Fintech increasingly functions as an organizational capability that improves financial management by integrating payment processing, financing, bookkeeping, and performance monitoring into a unified digital ecosystem.

Such integration allows entrepreneurs to obtain financial information more rapidly, improve cash flow visibility, reduce transaction costs, and strengthen managerial control. Consequently, fintech contributes to operational efficiency and strategic decision-making.

Empirical findings consistently demonstrate positive associations between fintech utilization and organizational performance, particularly among MSMEs operating in highly competitive environments (Gunawan et al., 2023; Wahyundaru et al., 2024b).

H5: Fintech adoption has a positive effect on MSMEs' financial performance.

The Mediating Role of Fintech Adoption

This study argues that organizational capability alone may not be sufficient to generate superior financial performance. Financial literacy and digital literacy provide entrepreneurs with valuable knowledge resources; however, these capabilities remain latent unless transformed into managerial practices that directly influence business operations.

Fintech adoption represents the mechanism through which such transformation occurs. Financial literacy enables entrepreneurs to recognize economically beneficial financial innovations, whereas digital literacy provides the technological competence required to implement them effectively. Once adopted, fintech facilitates more efficient financial

transactions, improves information quality, and strengthens financial control, thereby translating managerial capability into measurable organizational outcomes.

The integration of Accounting Capability Theory and Technology Adoption Theory suggests that fintech functions as a capability transformation mechanism rather than merely a technological innovation. Despite increasing scholarly attention to financial literacy, digital literacy, and fintech, relatively limited empirical evidence has investigated this mediating process within a unified theoretical framework, particularly in the context of MSMEs operating in emerging economies.

H6: Fintech adoption mediates the relationship between financial literacy and MSMEs' financial performance.

H7: Fintech adoption mediates the relationship between digital literacy and MSMEs' financial performance.

3. Methodology

Research Design

This study employed a quantitative explanatory research design to examine the relationships among financial literacy, digital literacy, fintech adoption, and MSMEs' financial performance. The proposed framework was developed to explain both the direct effects of financial and digital capabilities on business performance and the indirect effects transmitted through fintech adoption. Because this study sought to evaluate causal relationships among multiple latent constructs simultaneously, Partial Least Squares Structural Equation Modeling (PLS-SEM) was selected as the analytical approach. PLS-SEM is particularly appropriate for prediction-oriented research involving mediation analysis and complex structural relationships while accommodating data that do not necessarily satisfy multivariate normality assumptions (J. Hair et al., 2022)

An empirical investigation was conducted in Banten Province, Indonesia. The province represents one of Indonesia's rapidly expanding MSME ecosystems, supported by an increasing digital financial infrastructure and growing fintech penetration. Despite these developments, considerable disparities remain in financial capability and digital readiness among MSMEs, making Banten an appropriate empirical setting for investigating capability-driven digital transformation.

Sample and Data Collection

The target population comprised 103,828 registered MSMEs operating in the Banten Province, based on official records published by the Indonesian Central Bureau of Statistics (BPS) (Statistik, 2023). Because this study focuses on managerial capability rather than general business characteristics, respondents were selected using purposive sampling to ensure that only individuals directly involved in financial decision-making participated in the survey (Etikan et al., 2016).

Four eligibility criteria were established. Respondents were required to (1) own or manage an MSME, (2) operate the business for at least two years, (3) actively participate in financial planning and decision-making, and (4) possess experience using or interacting with digital financial services such as mobile banking, electronic wallets, QRIS, internet banking, or online financing platforms.

The minimum sample requirement was calculated using Slovin's formula with a five percent margin of error, resulting in a minimum sample of 399 respondents. After data screening, 400 complete and valid questionnaires were retained for analysis, exceeding the minimum sample requirement recommended for structural equation modeling (J. F. Hair et al., 2019).

Data were collected through an online questionnaire distributed via MSME associations, local business communities, entrepreneur forums and government-supported MSME networks. Before completing the questionnaire, the respondents received information regarding the research objectives, confidentiality procedures, and voluntary nature of participation. Informed consent was obtained electronically, and no personally identifiable information was collected. All research procedures complied with the ethical principles outlined in the Declaration of the Helsinki.

Measurement of Constructs

The research model consists of four latent constructs, measured using reflective indicators. All questionnaire items were rated on a seven-point Likert scale ranging from one ("strongly disagree") to seven ("strongly agree"). Compared with lower-scale response formats, a seven-point scale provides greater sensitivity in capturing respondents' perceptions while maintaining adequate reliability in behavioral research.

Financial literacy was operationalized using six indicators adapted from Tavares et al. (2023), representing respondents' capability to understand financial concepts, manage cash flow, evaluate financing alternatives, prepare financial plans, control expenditures, and assess financial risks.

Digital literacy was measured using five indicators adapted from Van Deursen and Van Dijk (2010), covering digital information processing, digital communication, content utilization, cybersecurity awareness, and digital problem-solving capability.

Fintech adoption was assessed using six indicators derived from the Technology Organization Environment (TOE) framework proposed by Tornatzky and Fleischer (1990). The indicators capture the perceived usefulness, organizational readiness, compatibility, technological support, environmental support, and ease of implementation.

Financial performance was measured using four subjective indicators adapted from Rauch et al. (2009), including sales growth, profitability growth, market share growth, and overall business performance relative to competitors. Subjective performance measures were selected because many MSMEs do not publicly disclose audited financial statements, making

perceptual performance assessment an appropriate alternative that is widely accepted in entrepreneurship research.

Table 1. Measurement Items

Construct	Indicators	Source
Financial Literacy	6	Tavares et al. (2023)
Digital Literacy	5	Van Deursen & Van Dijk (2010)
Fintech Adoption	6	Tornatzky & Fleischer (1990)
Financial Performance	4	Rauch et al. (2009)

Source: Developed by the authors based on the cited literature.

Data Analysis

Data analysis was conducted using SmartPLS 4, following the two-stage procedure recommended by Hair et al. (2022). The first stage focused on evaluating the measurement model to ensure that the constructs demonstrated acceptable psychometric property. Indicator reliability was examined through outer loadings, and internal consistency was evaluated using Cronbach's alpha and composite reliability. Convergent validity was assessed using the Average Variance Extracted (AVE), whereas discriminant validity was examined using the Heterotrait–Monotrait Ratio (HTMT) proposed by Henseler et al. (2015).

The second stage involved assessing the structural models. Hypothesis testing employed the bootstrapping procedure with 5,000 resamples to estimate the path coefficients, t-statistics, and significance levels. The model quality was further evaluated using the coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2). The mediating role of fintech adoption was assessed through indirect effect estimation and confidence intervals, following the bootstrapping procedure recommended by Preacher and Hayes (2008).

4. Result and Discussion

Respondent Profile

The final dataset comprised 400 valid responses from MSME owners and managers in Banten Province. The respondents represented various business sectors and possessed direct responsibility for financial planning and decision-making. Male respondents accounted for 56.5% of the sample, while female respondents represented 43.5%. Most participants were between 31 and 45 years old (48%), indicating that the sample was dominated by entrepreneurs within their productive working years. Furthermore, approximately 62% of the surveyed MSMEs had been operating for more than five years, suggesting that most respondents possessed adequate managerial experience to evaluate business financial practices and technology utilization.

The demographic characteristics indicate that the selected respondents were appropriate for examining the proposed relationships because they actively participated in strategic financial decisions and had sufficient exposure to digital financial services.

Table 2 Respondent Demographics

Description	Frequency	Percentage (%)
Gender (Male)	226	56.5
Gender (Female)	174	43.5
Age 31–45 years	192	48.0
Business age > 5 years	248	62.0

Measurement Model Assessment

Before evaluating the structural relationships, the quality of the measurement model was assessed to ensure that each construct satisfied the reliability and validity requirements.

Table 3 shows that all constructs achieved satisfactory internal consistency. Cronbach's alpha values ranged from 0.856 to 0.889, while Composite Reliability values exceeded the recommended threshold of 0.70 (Hair et al., 2022). These findings indicate that the measurement instruments consistently capture the intended latent constructs.

Convergent validity was also established. The Average Variance Extracted (AVE) values ranged from 0.62 to 0.71, exceeding the minimum recommended value of 0.50. Therefore, each construct explained more than half of the variance in its corresponding indicators.

Table 3. Measurement Model Evaluation

Variable	Cronbach's Alpha	Composite Reliability	AVE
Financial Literacy (FL)	0.861	0.902	0.62
Digital Literacy (DL)	0.889	0.918	0.65
Fintech Adoption (FA)	0.873	0.911	0.67
Financial Performance (FP)	0.856	0.904	0.71

Source: SmartPLS output.

Discriminant validity was subsequently evaluated using the Heterotrait–Monotrait Ratio (HTMT). As presented in Table 4, all HTMT values remained below the recommended threshold of 0.90 (Henseler et al., 2015), confirming that the latent constructs measured conceptually distinct phenomena.

Table 4. HTMT Matrix

Construct	FL	DL	FA	FP
FL	—			
DL	0.721	—		
FA	0.683	0.756	—	
FP	0.544	0.688	0.772	—

Source: SmartPLS output.

Structural Model Assessment

Following the confirmation of measurement quality, the structural model was evaluated through bootstrapping using 5,000 subsamples.

The findings reveal that financial literacy does not directly influence financial performance

($\beta = 0.083$; $t = 1.214$; $p = 0.225$), indicating that H1 is not supported. Conversely, digital literacy exerts a positive and statistically significant influence on financial performance ($\beta = 0.241$; $t = 3.862$; $p < 0.001$), thus supporting H2.

Financial literacy significantly enhances fintech adoption ($\beta = 0.318$; $t = 5.744$; $p < 0.001$), while digital literacy demonstrates an even stronger influence on fintech adoption ($\beta = 0.354$; $t = 6.281$; $p < 0.001$). Accordingly, H3 and H4 are supported.

The strongest direct relationship is observed between fintech adoption and financial performance ($\beta = 0.401$; $t = 7.093$; $p < 0.001$), confirming H5.

Table 5. Direct Effects

Hypothesis	Path	Coefficient	t-Statistic	p-Value	Decision
H1	FL $\rightarrow$ FP	0.083	1.214	0.225	Rejected
H2	DL $\rightarrow$ FP	0.241	3.862	0.000	Accepted
H3	FL $\rightarrow$ FA	0.318	5.744	0.000	Accepted
H4	DL $\rightarrow$ FA	0.354	6.281	0.000	Accepted
H5	FA $\rightarrow$ FP	0.401	7.093	0.000	Accepted

Source: SmartPLS output.

Mediation Analysis

Bootstrapping results demonstrate that fintech adoption significantly mediates the relationship between financial literacy and financial performance ($\beta = 0.128$; $t = 3.147$; $p = 0.002$). Because the direct relationship between financial literacy and financial performance is insignificant, whereas the indirect relationship remains significant, fintech adoption functions as a full mediator.

A different pattern emerges for digital literacy. Fintech adoption partially mediates the relationship between digital literacy and financial performance ($\beta = 0.142$; $t = 3.886$; $p < 0.001$). The significant direct and indirect effects indicate that digital capability contributes to financial performance, both independently and through fintech utilization.

Table 6. Indirect Effects

Hypothesis	Indirect Path	Coefficient	t-Statistic	p-Value	Decision
H6	FL $\rightarrow$ FA $\rightarrow$ FP	0.128	3.147	0.002	Accepted
H7	DL $\rightarrow$ FA $\rightarrow$ FP	0.142	3.886	0.000	Accepted

Source: SmartPLS output.

Model Evaluation

The explanatory capability of the structural model was assessed using the coefficient of determination (R^2). Financial literacy and digital literacy jointly explained 49% of the variance in fintech adoption ($R^2 = 0.49$). Meanwhile, financial literacy, digital literacy, and fintech adoption collectively explained 57% of the variance in financial performance ($R^2 = 0.57$). These results indicate that the proposed model demonstrates moderate explanatory power.

Effect size analysis further indicates that fintech adoption contributes the largest practical impact on financial performance ($f^2 = 0.29$), followed by digital literacy ($f^2 = 0.14$). Financial literacy exhibits only a negligible direct contribution ($f^2 = 0.02$), supporting the earlier finding that its influence is primarily indirect.

The predictive relevance analysis also confirmed the robustness of the model. The Q^2 values for fintech adoption (0.31) and financial performance (0.35) exceed zero, demonstrating that the model possesses a satisfactory predictive capability.

Table 7. Model Evaluation

Indicator	FA	FP
R^2	0,49	0.57
Q^2	0,31	0,35

Source: SmartPLS output.

Table 8. Effect Size (f^2)

Relationship	f^2
FL → FP	0.02
DL → FP	0.14
FA → FP	0.29
FL → FA	0.18
DL → FA	0.21

Source: SmartPLS output.

Discussion

Several important insights have emerged from the structural model. The first notable finding is the absence of a direct relationship between financial literacy and MSMEs' financial performance. This suggests that understanding financial concepts does not automatically translate into stronger business outcomes. In many MSMEs, owners may already possess basic knowledge regarding budgeting, cash flow management, and cost control, yet such knowledge often remains conceptual rather than operational. In other words, knowing what should be done financially is different from consistently implementing it in day-to-day business practice.

This finding helps explain why financial literacy alone failed to generate significant performance improvement in this study. Financial capability appears to create potential value, but that value remains dormant unless supported by practical tools and execution mechanisms. This result partially differs from Hutahtayan (2021) and Rahim & Balan (2020),

who reported a direct positive contribution of financial literacy to firm performance. This difference may indicate that in increasingly digital business environments, financial knowledge alone is no longer sufficient to create a competitive advantage.

A different pattern was observed for digital literacy. Unlike financial literacy, digital capability has a direct and significant contribution to financial performance. This indicates that MSMEs with stronger digital competence can adapt more quickly to technological changes and make better use of digital resources in business operations. The ability to navigate applications, process information rapidly, and use digital platforms effectively appears to improve managerial responsiveness. Faster access to information enables better decisions related to pricing, transactions, financial monitoring and operational efficiency. This result supports the argument that digital capability has evolved into a strategic resource rather than merely a technical skill.

The model also shows that both dimensions of literacy play a substantial role in driving fintech adoption. This finding reinforces the idea that technology adoption depends not only on the availability of technology but also on user readiness. Financial literacy reduces uncertainty when evaluating digital financial products, whereas digital literacy reduces the technical barriers associated with their use. MSME owners with stronger literacy capabilities are therefore more likely to perceive fintech as useful, manageable, and beneficial for business operations.

Among all structural relationships, fintech adoption produced the strongest contribution to financial performance. This highlights fintech as more than just a transactional convenience tool. Its role extends to improving business efficiency through faster payment processing, better cash flow visibility, easier financial recordkeeping, and broader access to funding sources. These benefits collectively improve financial control and support the sustainability of businesses. The relatively high effect size further indicates that fintech adoption is one of the most influential determinants of financial performance within the proposed model.

The most significant contribution of this research lies in clarifying the mechanism through which digital literacy creates business value. The mediation results reveal that fintech serves as the missing link between capability and performance. Financial literacy improved financial performance only indirectly through the adoption of fintech, indicating full mediation. This suggests that financial knowledge becomes economically meaningful only after being translated into concrete financial practices supported by digital tools.

A slightly different mechanism was observed for digital literacy. Fintech only partially mediated the relationship between digital literacy and financial performance, indicating that digital capability improves performance through two pathways simultaneously. First, digital literacy directly enhances operational effectiveness. Second, it indirectly strengthens performance by encouraging fintech usage. This dual pathway suggests that digital literacy

provides broader strategic value than financial literacy in highly digitalized business environments.

These findings contribute to theoretical development in two ways. First, the results extend the Accounting Capability Theory by showing that internal capabilities alone do not guarantee superior performance. Capabilities create readiness, but operational transformation is required before measurable values can emerge. Second, the results strengthen the Technology Adoption Theory by showing that technology functions as an enabling mechanism through which capabilities are converted into performance outcomes. In the context of MSMEs, fintech represents that mechanism by bridging knowledge, digital capability, and financial performance.

From a practical standpoint, the findings suggest that MSME development initiatives should move beyond conventional literacy-training. Improving financial knowledge remains important; however, training programs should also emphasize practical technology utilization. Programs that integrate financial education with fintech implementation, digital mentoring, and hands-on simulation are likely to produce stronger business outcomes than literacy programs focused solely on conceptual understanding. Similarly, fintech providers and policymakers should prioritize accessibility, usability, and education to accelerate digital financial inclusion among MSMEs.

5. Conclusion and Suggestion

This study provides evidence that improving MSMEs' financial performance is not simply a matter of increasing their knowledge. A more nuanced pattern emerges from the empirical results: capability alone does not guarantee performance improvement unless it is translated into practical business execution. This distinction becomes central in understanding why financial literacy and digital literacy contribute differently to MSME outcomes.

The results demonstrate that financial literacy, although important as a managerial capability, does not directly improve financial performance. This suggests that financial knowledge by itself creates preparedness rather than immediate business value. Without practical implementation mechanisms, such knowledge may remain passive and have a limited impact on performance. In contrast, digital literacy directly contributes to financial performance, indicating that the ability to engage with digital tools has become increasingly critical in modern business environments.

Another important insight is the strategic role of fintech adoption. The model confirms that fintech functions as a key enabler that transforms literacy-based capabilities into measurable, financial outcomes. Financial literacy influences performance only after passing through fintech adoption, confirming a full mediation mechanism. Meanwhile, digital literacy improved performance both directly and indirectly through fintech, indicating partial mediation. These patterns suggest that fintech serves as an operational bridge connecting knowledge, technology capability, and business performance.

From a theoretical perspective, this study reinforces the view that internal resources generate value only when converted into operational practice. The findings therefore strengthen both Accounting Capability Theory and Technology Adoption Theory by demonstrating that technological utilization acts as the mechanism through which capability is transformed into measurable performance outcomes.

The managerial implications are clear. Programs designed to support MSME development should no longer emphasize literacy improvement as a purely conceptual exercise. A greater impact is likely to be achieved when financial education is integrated with practical digital applications, fintech onboarding, and technology-based mentoring. For policymakers, expanding digital financial inclusion requires not only infrastructure but also capability-building initiatives. For fintech providers, designing intuitive, accessible, and MSME-oriented solutions is essential to accelerate adoption. Strengthening these elements may significantly improve MSMEs' resilience, competitiveness, and long-term sustainability in the digital economy.

6. Limitations and Future Research

Several limitations should be considered when interpreting the findings of this study: First, the cross-sectional design restricts the ability to observe causal dynamics and changes over time in financial literacy, digital literacy, fintech adoption, and financial performance. Future studies may adopt longitudinal approaches to better capture the evolution of these relationships during digital transformation.

Second, this study relied primarily on self-reported survey data, including subjective assessments of financial performance. Although subjective performance measures are commonly accepted in MSME research, they may introduce perceptual biases and reduce measurement precision. Future research should incorporate objective indicators, such as audited financial statements, revenue growth records, or profitability ratios, to enhance measurement robustness.

Third, this study focused solely on MSMEs located in Banten Province. Consequently, the generalizability of the findings may be limited when applied to regions with different technological infrastructures, financial inclusion levels, or business environments. Expanding future studies to broader national or cross-country contexts will improve external validity.

Finally, the proposed research model focused on literacy-related capabilities and fintech adoption as the primary explanatory variables. Other important organizational and environmental factors were not included in this model. Future studies may broaden this framework by integrating additional variables, such as innovation capability, entrepreneurial orientation, government intervention, organizational culture, or digital readiness, to obtain a more comprehensive understanding of MSME performance in the digital economy.

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