Journal of Economics, Entrepreneurship, Management Business and Accounting, 2026, 4(5),1499-1522.
https://doi.org/10.61255/jeemba.v4i5.1875

Enhancing MSME Performance through Digital Financial Capability and Financial Literacy: A Multi-Group Analysis Based on Experience

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ABSTRACT

Purpose – This study examines how digital financial capability and financial literacy influence the performance of Micro, Small, and Medium Enterprises (MSMEs), with financial capability serving as a mediating mechanism and business experience capturing heterogeneity across entrepreneurs.
Design/methodology/approach – A quantitative survey was conducted among 230 owners and managers of food and beverage MSMEs in South Tangerang. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and Multi-Group Analysis (MGA) was subsequently employed to compare structural relationships between MSMEs with less than five years and those with five years or more of business experience.
Findings/Results – Digital financial capability and financial literacy significantly enhance financial capability, while digital financial capability and financial capability significantly improve MSME performance. Financial literacy has no significant direct effect on MSME performance; however, its effect becomes significant through financial capability, confirming the critical role of practical financial capability in translating financial knowledge into business outcomes
Originality/Value – Digital financial capability and financial literacy significantly enhance financial capability, while digital financial capability and financial capability significantly improve MSME performance. Financial literacy has no significant direct effect on MSME performance; however, its effect becomes significant through financial capability, confirming the critical role of practical financial capability in translating financial knowledge into business outcomes.

ARTICLE INFO

Keywords:
Digital Financial Capability, Financial Literacy, Financial Capability, MSME Performance, Business Experience

Article Information:
Received: 22/06/2026
Revise: 25/07/2026
Accepted: 30/08/2026

ISSN:
2985-3168 (Online)
2985-3222 (Print)

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1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in Indonesia's economic development, contributing over 60% to Gross Domestic Product (GDP) and serving as a major source of employment. At the regional level, MSMEs are equally critical, particularly in South Tangerang, a rapidly growing urban fringe area with strong expansion in residential, commercial, and service sectors. The city's high population density and dominance of productive-age individuals create substantial market opportunities, especially in the food and beverage sector, which constitutes a significant portion of local MSMEs (Kementerian UMKM, 2025).

Empirically, the number of MSMEs in South Tangerang continues to increase. Data indicate that the number of MSMEs has reached approximately 90,000 to more than 92,783 business units, with the culinary sector emerging as one of the leading sectors. In 2025 alone, around 55,308 MSMEs were recorded as operating in the culinary sector in South Tangerang, highlighting the dominance of the food and beverage sector within the local MSME structure. Furthermore, local government data show that culinary MSMEs are distributed across all districts, indicating a high level of penetration and even distribution of businesses in this sector.

However, despite their large number and significant market potential, MSMEs in the food and beverage sector still face various challenges. Common issues include limited financial management capabilities, low levels of financial literacy, and suboptimal use of technology in business operations (Idah & Pinilih, 2020). This indicates that MSME performance is not solely determined by external factors such as competition and market conditions but is also influenced by internal factors, including financial capability and the digital competence of business actors (Demarchi et al., 2024).

MSMEs particularly in the food and beverage sector continue to face structural challenges, including limited financial management capability, low financial literacy, and insufficient adoption of digital technologies (Mai et al., 2024). Prior studies have emphasized the importance of financial literacy and digitalization; however, most research treats these factors independently and often relies on single-group analysis, thereby overlooking the underlying mechanisms through which these variables influence MSME performance (Qiu & Gao, 2026).

Research on MSME performance has expanded significantly over recent decades, with primary attention given to internal determinants such as financial literacy, financial capability, and digital technology adoption. In the context of the digital economy, the concept of digital financial capability has emerged as an extension of traditional financial capability, reflecting individuals' ability to effectively utilize digital financial services (Khurana et al., 2022).

Empirical studies highlight the importance of digital financial capability in enhancing financial management among business actors. Prior research (Ratnawati et al., 2025) demonstrates that the use of digital financial services such as mobile payments, online banking, and fintech significantly improves financial decision-making and business performance. Similarly, (Frimpong et al., 2022) find that digital capability strengthens rational financial behavior among entrepreneurs, while (Mutya & Ilankadhir, 2024) show that digital competencies contribute to operational efficiency and competitiveness of MSMEs. In parallel, financial literacy has been widely recognized as a fundamental determinant of financial capability. Studies (Akhtar et al., 2025; Mutya & Ilankadhir, 2024) confirm that higher levels of financial literacy not only promote the adoption of digital financial services but also significantly enhance financial capability among MSMEs.

Despite these advancements, existing literature presents two critical limitations. First, prior studies tend to examine financial literacy, digital capability, and MSME performance in isolation, lacking an integrated framework that explains their interrelationships. Second, most studies rely on single-group analysis, thereby overlooking the heterogeneity of MSMEs, particularly differences arising from business experience (Azam, 2015).

This study addresses these gaps by developing an integrated model that treats digital financial capability, financial literacy, and financial capability as conceptually related but distinct constructs. Digital financial capability captures competence that is specific to digitally mediated finance namely the ability to access, operate, evaluate, and safely use digital financial tools and information. Financial literacy is positioned primarily as a cognitive resource, reflecting understanding of financial concepts, risks, and principles. Financial capability, in contrast, represents behavioural execution: the consistent application of financial knowledge and available tools in planning funds, recording transactions, controlling costs, and making context sensitive financial decisions. Accordingly, digital competence and financial knowledge are modelled as antecedent resources that can be converted into business outcomes through enacted financial capability. The novelty of this research therefore lies in examining this capability-conversion pathway and in assessing whether its structural patterns vary across business-experience groups.

By integrating these elements, this study contributes to both theory and practice, offering a more robust framework for understanding MSME performance and providing actionable insights for policymakers and practitioners in designing strategies to enhance financial and digital capabilities in urban MSME.

2. Literature Review & Hypothesis Development

2.1 MSME Performance

MSME performance is a central construct in entrepreneurship and small business research, reflecting the extent to which firms achieve their strategic and operational objectives. It is commonly conceptualized as a multidimensional outcome encompassing both financial and non-financial indicators, including profitability, sales growth, market share, operational efficiency, and business sustainability (Changalima et al., 2025; Obadia & Vida, 2024). In MSMEs, performance measurement often extends beyond financial outcomes to include subjective assessments such as business stability, customer satisfaction, and competitive positioning, due to the limited availability of formal financial records (Dahri et al., 2025).

From a resource-based theory perspective, MSME performance is strongly influenced by the firm's internal capabilities, including financial capability, knowledge, and technological competence (Barney, 1991). In the digital economy, the concept of MSME performance is increasingly linked to the adoption and utilization of digital technologies. Digital capability, including digital financial capability, plays a critical role in improving operational efficiency, expanding market reach, and facilitating access to financial services (Niazi & Qodariah, 2025). Empirical studies suggest that MSMEs that adopt digital tools such as e payment systems, online platforms, and fintech services tend to exhibit higher productivity and competitiveness compared to those that rely on traditional business models (Finnbogason & Melin, 2014).

2.2 Digital Financial Capability

Digital financial capability refers specifically to competence in digitally mediated financial activities. In this study, its distinctive domain is the ability to understand, operate, and safely use digital financial technologies including QRIS, mobile banking, e-wallets, digital transfers, digital bookkeeping applications, and security practices such as PIN and OTP protection and to use digitally generated financial information in business decision-making. Unlike general financial capability, the construct is therefore defined by the digital channel and the technical, security, and information-use competencies required to function effectively within a digital financial ecosystem. It is not intended to represent general budgeting, cost control, or routine financial management behaviour (Pak et al., 2026; Ullah et al., 2025).

Theoretically, digital financial capability is treated as an enabling resource rather than as a synonym for financial capability. Digital tools can expand access to timely financial information, accelerate transactions, and support monitoring, but possessing the competence to use these tools does not necessarily mean that an entrepreneur consistently executes sound financial-management behaviour (Wang, 2024). The proposed mechanism therefore distinguishes digital competence from behavioural execution: digital financial capability provides technology specific resources, whereas financial capability captures how financial resources are actually planned, controlled, recorded, and acted upon in day to day business decisions (Vieira et al., 2024).

2.3 Financial Literacy

Financial literacy is conceptualized in this study primarily as a cognitive construct: the entrepreneur's knowledge and understanding of core financial concepts, including revenue, profit, costs, cash flow, budgeting, borrowing, financial risk, and the separation of personal and business finances. Although the broader literature sometimes incorporates skills, confidence, and behaviour into financial literacy, this study deliberately restricts the construct to financial understanding in order to distinguish what entrepreneurs know from what they actually do. This conceptual boundary is important because the model proposes that financial knowledge becomes economically meaningful when it is translated into financial capability (Atahau et al., 2023; Tahir et al., 2021).

Higher levels of financial literacy enable entrepreneurs to better evaluate financial opportunities and risks, thereby improving the efficiency of resource allocation and overall business performance. Empirical evidence supports this view, showing that financially literate business owners are more likely to adopt formal financial services, maintain accurate financial records, and implement effective financial planning strategies (Masdupi et al., 2024).

2.4 Financial Capability

Financial capability is conceptualized as behavioural execution in real business settings. It reflects the entrepreneur's demonstrated ability to apply financial knowledge and available financial tools through concrete practices such as planning the use of business funds, regularly managing income and expenses, recording transactions, controlling operating costs, and making financial decisions based on business conditions (Khan, Khurra et al., 2022). Thus, financial capability differs from financial literacy because it concerns enacted financial management rather than cognitive understanding, and it differs from digital financial capability because the behaviour is not defined by the use of a digital channel. In the proposed model, financial capability is the conversion mechanism through which cognitive and digital resources are translated into business relevant action (Khan & Mlouk, 2021).

From a theoretical perspective, this distinction supports a knowledge technology to action mechanism. Entrepreneurs may understand financial principles or be proficient with digital financial tools without consistently applying either resource to budgeting, cash-flow control, transaction recording, or context sensitive decisions (Xiao et al., 2022). Financial capability therefore occupies a downstream behavioural position in the model: financial literacy supplies cognitive resources, digital financial capability supplies technology-specific resources, and financial capability represents their practical execution. This sequencing provides the theoretical basis for treating digital financial capability and financial literacy as antecedents rather than overlapping components of financial capability (Suryani et al., 2017).

2.5 Business Experience

Business experience refers to the length and depth of an entrepreneur's involvement in business activities, reflecting accumulated knowledge, skills, and competencies acquired through prior and ongoing entrepreneurial practice. It is widely recognized as a critical component of human capital that influences decision-making quality, opportunity recognition, and overall firm performance (Bandura, 1963). In MSMEs, business experience represents a valuable intangible resource that shapes how entrepreneurs manage resources, respond to uncertainty, and adapt to changing market conditions (Rai et al., 2025).

From a theoretical perspective, business experience is grounded in human capital theory and experiential learning theory (Latino, 2025). Human capital theory posits that accumulated experience enhances productivity and decision-making capabilities, while experiential learning theory emphasizes learning by doing as a key mechanism for developing practical competencies (Zaimovic et al., 2025). Entrepreneurs with greater business experience are more likely to possess refined cognitive frameworks, enabling them to interpret market signals more effectively and make more strategic decisions.

2.6 Digital financial capability to financial capability

Digital financial capability is increasingly recognized as a key determinant of financial capability, particularly in the context of a rapidly evolving digital financial ecosystem. Prior studies suggest that individuals with higher digital financial capability tend to demonstrate better financial behaviors, including budgeting, saving, and financial planning, which are core components of financial capability. For instance, (Ullah et al., 2025) argue that the integration of digital skills with financial knowledge enhances individuals' ability to make informed financial decisions. Empirical evidence from (Wang, 2024) further confirms that digital financial capability positively influences financial behavior and financial management outcomes. In the MSME, the ability to adopt and utilize digital financial tools enables business actors to improve transaction efficiency, monitor cash flows in real time, and access formal financial services, thereby strengthening their overall financial capability.

H_1: Digital financial capability has a significant effect on financial capability.

2.7 Digital financial capability to MSME performance

Digital financial capability plays a crucial role in enhancing MSME performance, particularly in the context of increasing digitalization in financial and business activities. It reflects the ability of business actors to effectively utilize digital financial services such as mobile payments, online banking, and fintech platforms to support business operations. For instance, (Xia & Xu, 2025) emphasize that digital capabilities enable firms to achieve competitive advantage through improved operational efficiency and innovation. Similarly, (Nizam & Rashidi, 2024) reports that MSMEs leveraging digital financial services tend to experience increased productivity, broader market access, and enhanced financial inclusion. Empirical findings by (Kurniasari et al., 2023) further suggest that digital financial capability strengthens financial behavior and supports business sustainability. In the MSME, the ability to integrate digital financial solutions into daily operations allows entrepreneurs to optimize financial management and respond more effectively to market dynamics.

H_2: Digital financial capability has a significant effect on MSME performance.

2.8 Financial literacy to financial capability

Financial literacy is widely acknowledged as a fundamental determinant of financial capability, as it provides the essential knowledge and understanding required to make effective financial decisions. Prior studies indicate that individuals with higher levels of financial literacy are more likely to exhibit responsible financial practices, such as budgeting, saving, and managing debt, which are key components of financial capability. For instance, (Azira et al., 2024) highlight that financial literacy significantly improves financial decision making and financial well being. Similarly, (Tahir et al., 2021) find that financial literacy is positively associated with financial behaviors that reflect higher financial capability. In the MSME, financially literate entrepreneurs are better equipped to manage cash flows, allocate resources efficiently, and utilize financial services effectively, thereby enhancing their overall financial capability.

H_3: Financial literacy has a significant effect on financial capability.

2.9 Financial literacy to MSME performance

Financial literacy is a critical factor influencing MSME performance, as it equips entrepreneurs with the knowledge and skills necessary to make effective financial decisions and manage business resources efficiently. It enables business actors to understand financial statements, control cash flow, evaluate investment opportunities, and mitigate financial risks. For instance, (Kulathunga et al., 2020) emphasize that financial literacy enhances individuals' ability to make sound financial decisions, which directly impacts economic performance. Similarly, Frimpong et al., (2022) suggest that knowledge capabilities, including financial understanding, contribute to superior firm performance. Empirical findings also indicate that financially literate entrepreneurs are more likely to adopt formal financial practices, access external financing, and implement effective financial planning strategies, all of which support business growth and sustainability (Whajah & Adenutsi, 2024). In the MSME, financial literacy enables entrepreneurs to optimize financial management and respond more effectively to market dynamics, thereby improving overall business performance.

H_4: Financial literacy has a significant effect on MSME performance.

2.10 Financial capability to MSME performance

Financial capability plays a crucial role in determining MSME performance, as it reflects the ability of business actors to effectively apply financial knowledge, skills, and behaviors in managing business finances. Prior studies indicate that individuals with higher financial capability are better able to make informed financial decisions and respond to financial challenges. (Khan & Mlouk, 2021) demonstrate that financial capability significantly influences financial behaviors and outcomes, while (Suryani et al., 2017) highlight its importance in improving financial management practices. In the MSME, strong financial capability enables entrepreneurs to optimize operational efficiency, manage financial risks, and enhance access to financial resources, all of which contribute to improved business performance. Furthermore, financial capability serves as a bridge between financial knowledge and actual financial behavior, making it a key driver of tangible business outcomes.

H_5: Financial capability has a significant effect on MSME performance.

2.11 Financial capability mediates digital financial capability to MSME performance

Financial capability is expected to play a mediating role in the relationship between digital financial capability and MSME performance. While digital financial capability enables business actors to access and utilize digital financial services, its impact on business performance is not always direct but often operates through the enhancement of financial management practices. Prior studies suggest that financial capability serves as a bridge between knowledge or skills and actual financial behavior (Xia & Xu, 2025). Nizam & Rashidi, (2024) also emphasize that digital financial competence enhances financial behavior, which in turn influences economic outcomes. In the MSME, entrepreneurs with strong financial capability are more able to leverage digital financial tools to optimize cash flow management, reduce financial risks, and improve operational efficiency. Therefore, financial capability is expected to mediate the effect of digital financial capability on MSME performance.

H_6: Financial capability mediates the effect of digital financial capability on MSME performance.

2.12 Financial capability mediates financial literacy to MSME performance

Financial capability is expected to mediate the relationship between financial literacy and MSME performance. While financial literacy provides the foundational knowledge necessary to understand financial concepts and evaluate financial decisions, its direct impact on business performance may be limited without the ability to translate this knowledge into effective financial behavior. Prior studies support this mechanism, with (Whajah & Adenutsi, 2024) highlighting that financial capability reflects the application of financial knowledge in real life. Additionally, (Kulathunga et al., 2020) demonstrate that financial capability significantly influences financial outcomes by mediating the relationship between knowledge and behavior. In the MSME, entrepreneurs with higher financial capability are better able to utilize their financial knowledge to manage business resources effectively, mitigate risks, and enhance performance.

H7: Financial capability mediates the effect of financial literacy on MSME performance.

2.13 Difference in the effect of digital financial capability to MSME performance Based on business experience

Business experience is expected to influence the strength of the relationship between digital financial capability and MSME performance. Entrepreneurs with greater business experience tend to possess more developed cognitive frameworks, practical knowledge, and adaptive capabilities, enabling them to better leverage digital financial tools in improving business outcomes. Prior studies suggest that experience enhances the ability to interpret market information and apply technological and financial knowledge more effectively (Emami & Dimov, 2017). Furthermore, (Vieira et al., 2024) highlight that experienced entrepreneurs differ significantly from novice entrepreneurs in their decision-making processes and strategic responses. In digital transformation, experienced MSME actors are more likely to integrate digital financial solutions into their operations, thereby maximizing their impact on performance. Consequently, the effect of digital financial capability on MSME performance is expected to vary across different levels of business experience.

H_8: Based on business experience, there is a significant difference in the effect of digital financial capability on MSME performance.

2.14 Difference in the effect of financial literacy to MSME performance Based on business experience

Business experience is expected to influence the relationship between financial literacy and MSME performance, as it shapes how effectively financial knowledge is applied in business practices. While financial literacy provides the foundation for understanding financial concepts and decision making, its impact on performance may vary depending on the entrepreneur’s level of experience. Prior studies indicate that experience enhances the ability to utilize knowledge and improve decision making quality (Yakob et al., 2021). Additionally, (Priyantoro et al., 2023) show that experienced entrepreneurs exhibit more structured and effective managerial behavior than novice entrepreneurs. In the MSME, this suggests that financial literacy may have a stronger effect on performance among more experienced business actors, while its impact may be limited among less experienced ones.

H_9: Based on business experience, there is a significant difference in the effect of financial literacy on MSME performance.

2.15 Difference in the effect of financial capability to MSME performance Based on business experience

Business experience is expected to differentiate the structural relationship between Financial Capability and MSME Performance across experience groups, as it influences how effectively financial skills and behaviors are applied in business operations. While financial capability reflects the ability to manage financial resources, plan budgets, and make informed financial decisions, its impact on performance may vary across different levels of entrepreneurial experience. In contrast, less experienced entrepreneurs may not fully optimize their financial capability due to limited exposure and managerial experience. (Azira et al., 2024) highlight significant differences in behavior and strategic orientation between novice and experienced entrepreneurs. In the MSME, this suggests that financial capability may have a stronger effect on performance among more experienced business actors.

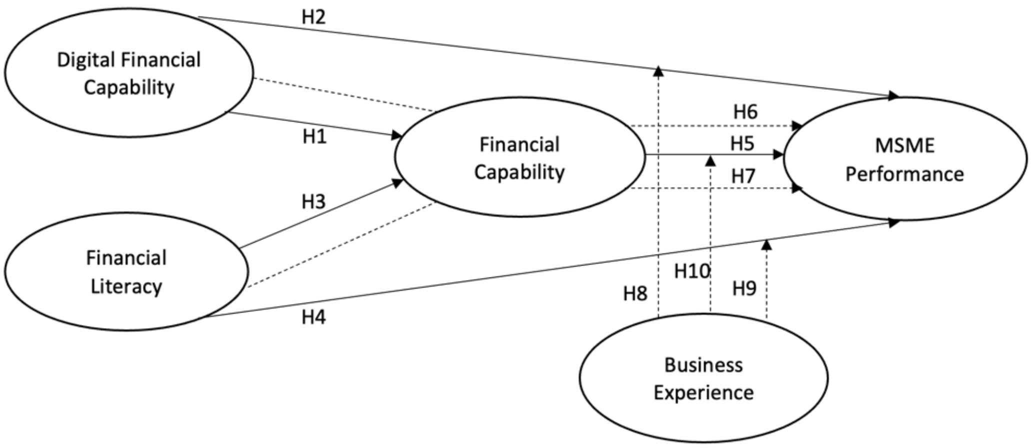
H_{10}: Based on business experience, there is a significant difference in the effect of financial capability on MSME performance.

3. Methodology

Based on figure 1. This study adopts a quantitative survey approach to examine the structural relationships among digital financial capability, financial literacy, financial capability, and MSME performance in the food and beverage sector. The research population consists of MSME actors operating in the food and beverage industry in South Tangerang. Using Cochran's formula for an unknown population with Z = 1.96, p = 0.50, q = 0.50, and a margin of error of 0.07 yields a minimum sample requirement of approximately 196 respondents. The final study obtained 230 valid responses, thereby exceeding this minimum requirement (Sekaran & Bougie, 2016).

Data collection was conducted between January and March 2026 using structured online questionnaires distributed via QR code links, supported by direct field assistance to ensure respondents' understanding and minimize misinterpretation. Respondents were selected based on specific inclusion criteria, namely MSME owners or managers in the food and beverage sector who are actively involved in financial and business decision-making processes.

Figure 1. Research Model



Source: Developed by Author, 2026

The measurement instrument utilized a five-point Likert scale and incorporated indicators adapted from prior studies to measure digital financial capability, financial literacy, financial capability, and MSME performance. Business experience was operationalized as a grouping variable rather than a latent construct. To ensure consistency throughout the analysis, respondents were categorized into two mutually exclusive groups: less than five years of business experience (< 5 years) and five years or more of business experience (≥ 5 years). MSME performance was measured using respondents' perceptual assessments of revenue growth, profit growth, cost efficiency, customer/sales/branch growth, and competitiveness; these measures were not independently verified using objective financial records.

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM). The analysis included data screening, descriptive analysis, assessment of reliability and convergent validity, discriminant-validity assessment using HTMT, and evaluation of the structural model through path coefficients and adjusted R^2. Bootstrapping with 5,000 resamples was used to assess the significance of direct and indirect effects. For mediation, direct and indirect paths were interpreted jointly to distinguish complementary partial mediation from indirect-only mediation. For comparisons between MSMEs with <5 years and ≥5 years of business experience, measurement invariance was first assessed using the Measurement Invariance of Composite Models (MICOM) procedure. After compositional invariance was established, Multi-Group Analysis (MGA) was conducted to directly test whether the structural path coefficients differed significantly between the two experience groups. Two-tailed p-values were used because H8–H10 proposed non-directional differences between groups (Hair et al., 2019).

Because the study uses a cross-sectional, single-source questionnaire, the estimated relationships should be interpreted as associations consistent with the proposed theoretical mechanism rather than definitive causal effects. The use of self-reported capability and performance measures also creates a potential risk of common method variance and positive self-assessment. Accordingly, causal language is moderated in the interpretation, and these design limitations are explicitly considered when discussing the findings and their generalizability.

Furthermore, Multiple Group Analysis (MGA) was applied to examine differences in structural relationships across the two business experience groups. This approach enables the identification of whether business experience strengthens, weakens, or does not influence the relationships between digital financial capability, financial literacy, financial capability, and MSME performance. Overall, this methodological framework provides robust empirical evidence on how financial and digital capabilities influence MSME performance within heterogeneous business experience contexts.

The evaluation of the measurement model was conducted by examining the outer loading values of each indicator to assess convergent validity. Based on table 1, all indicators demonstrate loading factor values above the acceptable threshold of 0.70, indicating that each item has a strong correlation with its respective construct. Specifically, the Digital Financial Capability construct shows loading values ranging from 0.77 to 0.932, suggesting that all indicators are valid and reliably measure the construct. Similarly, the Financial Literacy construct exhibits high loading values between 0.879 and 0.937, indicating strong indicator reliability.

For the Financial Capability construct, all indicators also meet the recommended threshold, with loading values ranging from 0.812 to 0.92, confirming that the items adequately represent the construct. Furthermore, the MSME Performance construct demonstrates consistently high loading values, ranging from 0.901 to 0.927, reflecting a strong level of convergent validity across all indicators. Although the Business Experience variable is treated as a grouping variable rather than a latent construct, it is not included in the outer loading evaluation.

Overall, the results indicate that all measurement items are valid and suitable for further analysis, as they meet the criteria for convergent validity. This confirms that the indicators used in this study are capable of accurately measuring their respective latent constructs within the research model.

Table 1. Operational Definition and Measurement Models

Variable	Item	Loading Factor
Digital Financial Capability	Understanding the use of QRIS, mobile banking, e-wallets, and digital transfers for business	0,810
	Ability to use digital payment applications in business transactions	0,880
	Ability to use digital financial recording applications	0,932
	Understanding the importance of PIN security, OTP, and digital transaction account protection	0,911
	Using digital information/features to support business financial decision-making	0,770
Financial Literacy	Understanding the difference between revenue, profit, cost, and cash flow	0,920
	Understanding the importance of business budgeting	0,933
	Understanding the benefits and risks of business loans/capital	0,879
	Understanding financial risks in running a business	0,920
	Understanding the importance of separating personal and business finances	0,937
Financial Capability	Planning the use of business funds	0,837
	Managing business income and expenses regularly	0,812
	Recording business transactions routinely	0,883
	Controlling operational costs	0,920

	Making financial decisions based on business conditions	0,912
Business Experience	Length of business operation (< 5 years or ≥ 5 years)	-
MSME Performance	Business revenue has increased	0,904
	Business profit has increased over a certain period	0,901
	Operational costs are managed more efficiently	0,927
	Business shows growth in terms of customers/sales/branches	0,921
	Business is able to compete with similar businesses	0,915

Source: Data Processing SMARTPLS, 2025

4. Result and Discussion

4.1 Respodent Description

Table 2. presents the demographic characteristics of the respondents based on gender, business experience, and type of business. In terms of gender, the majority of respondents are women, accounting for 172 individuals (75%), while male respondents represent 58 individuals (25%). This indicates that female entrepreneurs dominate the MSME food and beverage sector in the study area.

Regarding business experience, 130 respondents (56.5%) had operated their businesses for five years or more, while 100 respondents (43.5%) had less than five years of business experience. This distribution suggests that the sample is largely composed of relatively experienced business actors, which may contribute to more stable and informed business practices.

In terms of business type, the respondents are fairly balanced between the two categories, with 128 respondents (56%) operating in the food sector and 102 respondents (44%) in the beverage sector. This indicates that both sub-sectors are well represented in the study, allowing for a comprehensive analysis of MSME performance within the food and beverage industry.

Overall, the respondent profile reflects a diverse yet experience dominant sample, providing a solid basis for analyzing the relationships between financial literacy, digital financial capability, financial capability, and MSME performance.

Table 2. Respondent Identity

	Amount	**Percentage**
Gender		
Woman	172	75%
Man	58	25%
Experience		
< 5 Year	100	**43.5%**
≥ 5 Year	130	**56.5%**
Type of business		
Food	128	56%
Beverage	102	44%

Source: Author Data Processing, 2026

4.2 Outer Model: AVE, Composite Reliability, HTMT

Table 3. show, the reliability and convergent validity of the measurement model were assessed using Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). The results indicate that all constructs meet the recommended thresholds, confirming the

adequacy of the measurement model. Specifically, Cronbach's Alpha values for all variables exceed the minimum requirement of 0.70, with values ranging from 0.913 to 0.953, indicating high internal consistency among the indicators. Similarly, Composite Reliability values range from 0.935 to 0.964, surpassing the recommended threshold of 0.70, which further confirms the strong reliability of the constructs. In terms of convergent validity, all constructs demonstrate AVE values above the acceptable threshold of 0.50, ranging from 0.744 to 0.843. This indicates that each construct explains more than 50% of the variance of its indicators, confirming that the indicators adequately represent their respective latent variables. Among the constructs, Financial Literacy shows the highest AVE value (0.843), followed by MSME Performance (0.834), Financial Capability (0.763), and Digital Financial Capability (0.744), all of which reflect strong convergent validity.

Table 3. Construct Reliability and Validity

	Cronbach's alpha	Composite reliability	AVE
Digital Financial Capability	0,913	0,935	0,744
Financial Capability	0,922	0,941	0,763
Financial Literacy	0,953	0,964	0,843
MSME performance	0,950	0,962	0,834

Source: Data Processing SMARTPLS, 2026

Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT). Two construct pairs are below the 0.90 benchmark Financial Literacy, Digital Financial Capability (0.896) and MSME Performance, Financial Literacy (0.790) whereas Financial Capability, Digital Financial Capability (0.929), Financial Literacy, Financial Capability (0.900), MSME Performance, Digital Financial Capability (0.902), and MSME Performance, Financial Capability (0.915) are at or above 0.90. These results indicate that discriminant validity is not fully established under the conventional 0.90 criterion and that several constructs show substantial empirical overlap.

Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT). The HTMT values indicate that Financial Literacy to Digital Financial Capability (0.896) and MSME Performance to Financial Literacy (0.790) are below the conventional threshold of 0.90. However, Financial Capability to Digital Financial Capability (0.929), Financial Literacy to Financial Capability (0.900), MSME Performance to Digital Financial Capability (0.902), and MSME Performance toFinancial Capability (0.915) are at or above this threshold. Therefore, the point-estimate HTMT results indicate potential discriminant validity concerns among several constructs and do not, by themselves, provide sufficient evidence of complete discriminant validity. To further assess discriminant validity, bootstrapped HTMT inference with 95% confidence intervals was performed. Discriminant validity was considered supported when the upper confidence-interval bound remained below 1.00.

Accordingly, discriminant validity cannot be considered fully established under the HTMT < 0.90 criterion. The elevated HTMT values indicate substantial empirical overlap among several central constructs, particularly Digital Financial Capability, Financial Capability, and MSME Performance (Hair et al., 2019). Therefore, structural relationships involving these constructs should be interpreted cautiously.

Table 4. Discriminant Validity

	HTMT

Financial Capability <-> Digital Financial Capability	0,929
Financial Literacy <-> Digital Financial Capability	0,896
Financial Literacy <-> Financial Capability	0,900
MSME performance <-> Digital Financial Capability	0,902
MSME performance <-> Financial Capability	0,915
MSME performance <-> Financial Literacy	0,790

Source: Data Processing SMARTPLS, 2026

4.3 Inner Models: R^2 and F^2

The structural model evaluation was conducted by examining the R-square (R^2) adjusted values to assess the explanatory power of the model explain in Table 5. The results show that the R^2 adjusted value for Financial Capability is 0.785, indicating that 78.5% of the variance in Financial Capability can be explained by its predictor variables, namely Digital Financial Capability and Financial Literacy. This suggests that the model has strong explanatory power in predicting Financial Capability.

Similarly, the R^2 adjusted value for MSME Performance is 0.777, which means that 77.7% of the variance in MSME Performance is explained by Digital Financial Capability, Financial Literacy, and Financial Capability. According to commonly accepted criteria (Hair et al., 2019). The adjusted R^2 value of 0.777 indicates that 77.7% of the variance in MSME Performance is explained by the predictors included in the model, reflecting substantial in-sample explanatory power.

Table 5. R Square

	R-square adjusted
Financial Capability	0,785
MSME performance	0,777

Source: Data Processing SMARTPLS, 2026

Table 6 presents the effect size (f^2) of each exogenous construct on the endogenous constructs. The f^2 statistic represents the change in the explained variance of an endogenous construct when a specific predictor is omitted from the model. Therefore, it should not be interpreted as a standardized path coefficient. The results indicate varying magnitudes of effect across the structural relationships. These effect sizes should be interpreted separately from the standardized path coefficients reported in the hypothesis testing results.

Table 6. F Square

	Financial Capability	MSME performance
Digital Financial Capability	0,332	0,189
Financial Literacy	0,290	0,003
Financial Capability		0,284

Source: Data Processing SMARTPLS, 2026

4.4 Hypothesis Testing

Table 7. Hypothesis Testing

	T statistics	P values	Result
Digital Financial Capability -> Financial Capability	7,907	0,000	H1 Confirmed

Digital Financial Capability -> MSME performance	5,488	0,000	H2 Confirmed
Financial Literacy -> Financial Capability	7,105	0,000	H3 Confirmed
Financial Literacy -> MSME performance	0,640	0,522	H4 Not Confirmed
Financial Capability -> MSME performance	5,832	0,000	H5 Confirmed
Digital Financial Capability -> Financial Capability -> MSME performance	5,016	0,000	H6 Confirmed
Financial Literacy -> Financial Capability -> MSME performance	4,171	0,000	H7 Confirmed

Source: Data Processing SMARTPLS, 2026

Furthermore, Financial Capability is significantly associated with MSME Performance ($T = 5.832$; $p < 0.001$), supporting H5. The mediation results show a significant indirect pathway from Digital Financial Capability to MSME Performance through Financial Capability ($T = 5.016$; $p < 0.001$) and from Financial Literacy to MSME Performance through Financial Capability ($T = 4.171$; $p < 0.001$). Because the direct Digital Financial Capability → MSME Performance path is also significant and positive, H6 is interpreted as complementary partial mediation. In contrast, the direct Financial Literacy → MSME Performance path is not significant while its indirect pathway through Financial Capability is significant; H7 is therefore interpreted as indirect-only mediation. Standardized indirect-effect coefficients, bootstrapped confidence intervals, and total effects should be reported from the SmartPLS specific-indirect-effects and total-effects outputs to quantify the magnitude of these mechanisms; these statistics cannot be inferred reliably from t-statistics and p-values alone.

Furthermore, Financial Capability has a significant positive effect on MSME Performance ($T = 5.832$; $p = 0.000$), supporting H5. This finding highlights the crucial role of financial capability in driving business performance. In terms of mediation effects, Digital Financial Capability has a significant indirect effect on MSME Performance through Financial Capability ($T = 5.016$; $p = 0.000$), confirming H6. Likewise, Financial Literacy also shows a significant indirect effect on MSME Performance through Financial Capability ($T = 4.171$; $p = 0.000$), supporting H7.

The mediation analysis indicates complementary partial mediation because Digital Financial Capability maintains a significant direct relationship with MSME Performance while also exerting a significant specific indirect effect through Financial Capability. This finding indicates that digital financial competence contributes to performance both directly and through its conversion into practical financial-management capability. Financial Capability exhibits an indirect only mediating role in the relationship between Financial Literacy and MSME Performance. Financial Literacy does not significantly relate directly to performance, but its specific indirect effect through Financial Capability is significant. This finding strengthens the study's central capability conversion argument: financial knowledge contributes to MSME performance when it is translated into enacted financial-management capability

Table 8. MICOM Step 2 – Compositional Invariance Assessment

Construct	Original Correlation	Permutation Mean	5% Quantile	Permutation p-value	Compositional Invariance
Digital Financial Capability	1.000	1.000	0,999	0,722	Established
Financial Capability	0,999	1.000	0,999	0,207	Established

Financial Literacy	1.000	1.000	1.000	0,264	Established
MSME Performance	1.000	1.000	1.000	0,813	Established

Source: Data Processing SMARTPLS, 2026

Tabel 8. the MICOM procedure was conducted to assess measurement invariance across MSMEs with less than five years of business experience and those with five years or more. In Step 2, compositional invariance was established for all constructs. The original correlations for Digital Financial Capability, Financial Capability, Financial Literacy, and MSME Performance ranged from 0.999 to 1.000 and were equal to or greater than the corresponding 5% quantile values. Furthermore, all permutation p-values exceeded the 0.05 threshold, with values of 0.722, 0.207, 0.264, and 0.813, respectively. These results indicate that the composite scores are formed equivalently across the two business experience groups. As configural invariance was established in Step 1 and compositional invariance was confirmed in Step 2, partial measurement invariance was established, permitting meaningful comparison of structural path coefficients across the two business experience groups.

Table 9. Multi Group Analysis

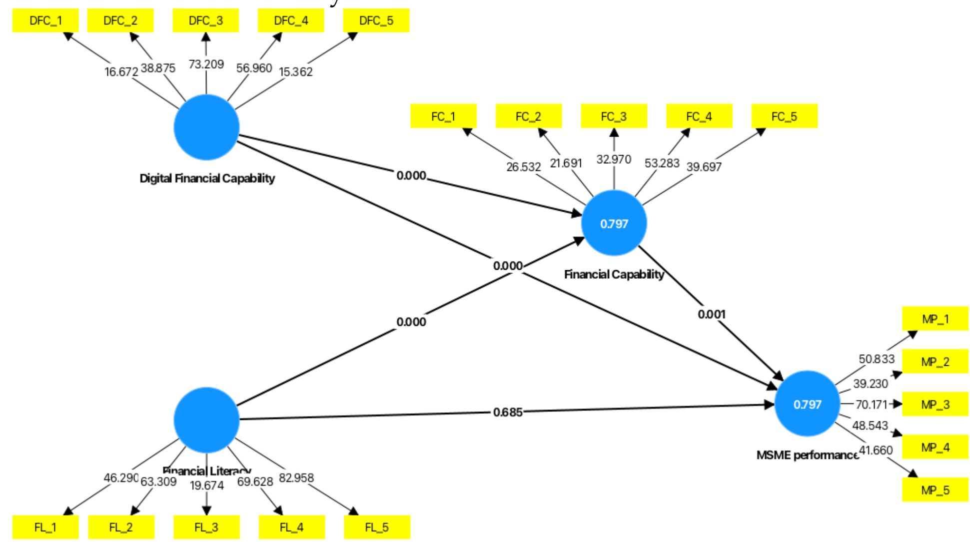
Structural Path	Path Difference (<5 years – ≥5 years)	Two-Tailed p-value	Decision
Digital Financial Capability → MSME Performance	−0.062	0.711	H8 Not Supported
Financial Capability → MSME Performance	−0.160	0.355	H10 Not Supported
Financial Literacy → MSME Performance	0.266	0.110	H9 Not Supported

Source: Data Processing SMARTPLS, 2026

As presented in Table 9, the Multi-Group Analysis (MGA) reveals no statistically significant differences in the structural relationships between MSMEs with <5 years and ≥5 years of business experience. The difference in the Digital Financial Capability → MSME Performance relationship was −0.062 ($p = 0.711$), indicating that the association did not significantly differ between the two experience groups. Therefore, H8 was not supported. Similarly, the difference in the Financial Literacy → MSME Performance relationship was 0.266 ($p = 0.110$), which was not statistically significant; thus, H9 was not supported. The Financial Capability → MSME Performance relationship also showed no significant between-group difference ($\Delta\beta = -0.160$, $p = 0.355$), resulting in H10 not being supported.

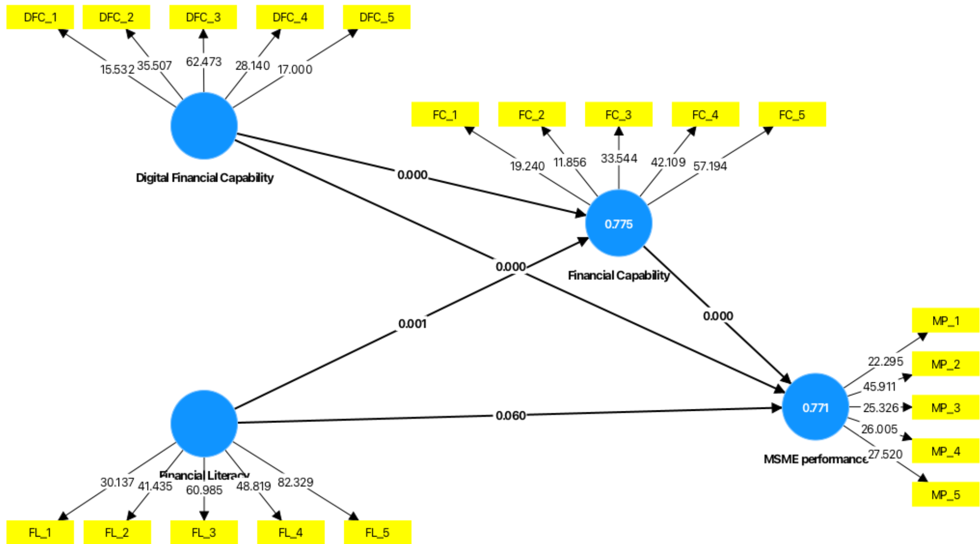
Overall, these results provide no statistical evidence that business experience differentiates the effects of digital financial capability, financial literacy, or financial capability on MSME performance. Although the magnitude of the path coefficients varies descriptively between the two groups, these numerical differences are not statistically significant and therefore should not be interpreted as experience-based structural heterogeneity.

Figure 2. Research Result Model < 5 yr



Source: Data Processing SMARTPLS, 2026

Figure 3. Research Result Model ≥ 5 yr



Source: Data Processing SMARTPLS, 2026

4.6 Digital financial capability to financial capability

The findings confirm that digital financial capability has a positive and significant effect on financial capability, indicating that MSME actors who are more proficient in using digital financial tools tend to exhibit stronger financial management abilities. This result highlights that digital financial capability is not merely a technical skill but a critical enabler that transforms financial knowledge into effective financial behavior. In the digital economy, the ability to utilize tools such as mobile banking, e-wallets, and digital bookkeeping systems allows entrepreneurs to access financial information in real time, improve transaction efficiency, and enhance control over cash flow (Oktaviani, 2025). From a theoretical perspective, this supports the integration of financial capability theory and digital capability frameworks, where behavioral outcomes are strengthened through the application of both financial and digital competencies.

This finding is consistent with prior studies, such as (Ullah et al., 2025), who emphasize that digital financial competence enhances financial behavior. (Wang, 2024) further confirm that digital financial capability significantly influences financial management outcomes. In the MSME, the adoption of digital financial services enables more structured and transparent financial practices, which ultimately strengthen financial capability. Therefore, this result underscores that improving MSME financial capability requires not only enhancing financial literacy but also integrating digital financial skills, as both are essential in developing more adaptive, efficient, and sustainable financial management practices.

4.7 Digital financial capability to MSME performance

The findings indicate that digital financial capability has a positive and significant effect on MSME performance, suggesting that business actors who are more proficient in utilizing digital financial tools tend to achieve better business outcomes. This highlights that digital financial capability plays a strategic role in enhancing operational efficiency, improving transaction speed, and enabling more accurate financial decision making. In the MSME, the use of digital financial services such as mobile payments, e-wallets, and online banking facilitates smoother business processes, reduces transaction costs, and expands market access, all of which contribute to improved performance (Oktaviani, 2024).

This result is consistent with prior studies, such as (Xia & Xu, 2025), who emphasize that digital capabilities drive competitive advantage and firm performance. (Nizam & Rashidi, 2024) further highlight that digital financial capability strengthens financial behavior and business sustainability. Integration of digital financial tools is essential for MSMEs to remain competitive and adaptive in a rapidly evolving digital economy, ultimately leading to enhanced business performance.

4.8 Financial literacy to financial capability

The results indicate that financial literacy has a positive and significant effect on financial capability. This finding highlights that financial literacy serves as a foundational element in shaping financial capability, as it enables entrepreneurs to understand key financial concepts such as budgeting, cash flow management, and risk assessment (Salmah et al., 2023). With better financial understanding, business actors are more capable of making informed financial decisions, allocating resources efficiently, and managing their business finances in a structured and disciplined manner.

This result is consistent with prior studies, such as (Azira et al., 2024), who argue that financial literacy improves financial decision making and overall financial well-being, and (Tahir et al., 2021), who find that financial literacy significantly influences financial behavior as a reflection of financial capability. In the MSME, financially literate entrepreneurs are more likely to adopt sound financial practices, such as maintaining financial records and planning expenditures, which ultimately strengthen their financial capability. Therefore, improving financial literacy is a critical step in enhancing financial capability, which in turn supports better financial management and business sustainability.

4.9 Financial literacy to MSME performance

The findings indicate that financial literacy does not have a significant direct effect on MSME performance, leading to the rejection. This suggests that although MSME actors may possess adequate financial knowledge, such knowledge alone is not sufficient to directly improve business outcomes. In practice, financial literacy tends to remain at a cognitive level and does not automatically translate into effective financial actions that impact performance (Whajah & Adenutsi, 2024). This implies that MSME performance is more strongly influenced by the ability to apply financial knowledge rather than the knowledge itself highlighting the gap between understanding and implementation.

This result is not consistent with prior studies which argue that financial literacy requires transformation into financial behavior to generate tangible outcomes. Kulathunga et al., (2020) emphasize that financial knowledge alone does not guarantee improved financial well being unless it is accompanied by appropriate financial practices. In the MSME, this finding reinforces the importance of financial capability as a mediating variable, where financial literacy contributes indirectly to MSME performance through its influence on financial capability. Therefore, improving MSME performance requires not only enhancing financial literacy but also strengthening the practical application of financial knowledge in business operations.

4.10 Financial capability to MSME performance

The results show that financial capability has a positive and significant effect on MSME performance. This indicates that MSME actors who are able to effectively manage financial resources such as planning budgets, controlling costs, and making informed financial decisions tend to achieve better business outcomes. Financial capability reflects the practical application of financial knowledge into daily business operations, enabling entrepreneurs to maintain stable cash flows, optimize resource allocation, and respond more effectively to financial challenges (Suryani et al., 2017). As a result, MSMEs with stronger financial capability are more likely to improve profitability, efficiency, and overall business sustainability. Khan & Mlouk, (2021) demonstrate that financial capability significantly influences financial behavior and outcomes. In the MSME, financial capability serves as a key mechanism that translates knowledge and skills into measurable performance improvements. Financial capability is a critical driver of MSME success, emphasizing the need for business actors to not only understand financial concepts but also apply them effectively in managing their enterprises.

4.11 Financial capability mediates digital financial capability to MSME performance

The results confirm that financial capability significantly mediates the relationship between digital financial capability and MSME performance. This finding indicates that the impact of digital financial capability on business performance is not solely direct but operates through the enhancement of financial capability. In other words, the ability to use digital financial tools such as mobile banking, e-wallets, and digital bookkeeping systems first strengthens MSME actors' financial management practices, which in turn leads to improved business performance (Xia & Xu, 2025). This highlights that digital financial capability becomes more effective when it is translated into practical financial behaviors, such as better cash flow management, cost control, and financial planning. Nizam & Rashidi, (2024) argue that financial capability reflects the application of knowledge and skills into real financial behavior, highlight that digital financial competence improves financial behavior, which ultimately affects economic outcomes. In the MSME, this finding underscores that digital financial adoption alone is insufficient unless it enhances financial capability.

4.12 Financial capability mediates financial literacy to MSME performance

The results confirm that financial capability significantly mediates the relationship between financial literacy and MSME performance. This indicates that financial literacy does not directly translate into improved business performance but operates through financial capability as an intermediate mechanism. In other words, financial knowledge must first be transformed into practical financial behaviors such as budgeting, cash flow management, and cost control before it can generate tangible business outcomes. This finding highlights that the effectiveness of financial literacy depends on the extent to which it is applied in real business practices. (Whajah & Adenutsi, 2024) argue that financial capability reflects the application of financial knowledge in real life, emphasize that financial literacy alone is insufficient without behavioral implementation. (Kulathunga et al., 2020) further demonstrate that financial capability significantly influences financial outcomes by mediating the relationship between knowledge and behavior. In the MSME, this finding underscores that improving business performance requires not only enhancing financial literacy but also strengthening financial capability, as it is the practical execution of financial knowledge that ultimately drives business success.

4.13 Difference in the effect of digital financial capability to MSME performance Based on business experience

The MGA results indicate no statistically significant difference in the effect of Digital Financial Capability on MSME Performance between MSMEs with <5 years and ≥5 years of business experience. This finding suggests that the performance benefits associated with digital financial capability are relatively consistent across different levels of business experience. Although experienced entrepreneurs may possess greater accumulated business knowledge, the present evidence does not demonstrate that such experience significantly changes the strength of the relationship between digital financial capability and MSME performance.

This finding contrasts with the expectation that accumulated experience enables entrepreneurs to extract greater performance benefits from digital financial resources (Emami & Dimov, 2017; Vieira et al., 2024). One possible interpretation is that digital financial tools such as mobile banking, e-wallets, digital payments, and digital bookkeeping have become sufficiently accessible and standardized that their business benefits are not restricted to highly experienced entrepreneurs. Thus, the contribution of digital financial capability to MSME performance appears to depend more on entrepreneurs' ability to use digital financial resources effectively than on the length of their business experience.

4.14 Difference in the effect of financial literacy to MSME performance Based on business experience

The results indicate that there is no significant difference in the effect of financial literacy on MSME performance based on business experience. This descriptive pattern suggests that the influence of financial literacy on business performance remains relatively consistent across both less experienced and more experienced MSME actors. In other words, regardless of how long entrepreneurs have been operating their businesses, financial literacy alone does not directly lead to improved performance. This reinforces the earlier finding that financial literacy operates at a cognitive level and does not automatically translate into measurable business outcomes without being supported by practical financial application (Zaimovic et al., 2025). Contrary to the expectation that accumulated business experience strengthens entrepreneurs' ability to convert financial knowledge into superior performance, the findings indicate that financial literacy remains insufficient as a stand alone performance resource regardless of business experience. This result extends the capability conversion perspective by showing that experience itself does not resolve the knowledge performance gap. Rather, financial knowledge appears to require translation into enacted financial capability before it becomes relevant to business performance. The novelty therefore lies not merely in finding that H9 is unsupported, but in demonstrating that the indirect nature of the financial literacy performance relationship persists across different levels of business experience.

4.15 Difference in the effect of financial capability to MSME performance Based on business experience

The MGA results show no statistically significant difference in the effect of Financial Capability on MSME Performance between the two business experience groups. Although the group specific coefficients may differ numerically, the direct between group test indicates that the difference is not statistically significant. Accordingly, the relationship between financial capability and MSME performance cannot be considered contingent on business experience in the present sample.

This finding suggests that the ability to plan business funds, manage income and expenditure, record transactions, control operating costs, and make financial decisions is relevant to MSME performance regardless of how long the business has operated. While prior research suggests that accumulated experience may enhance decision-making and resource allocation, the present results indicate that experience does not significantly alter the performance contribution of financial capability. This extends the capability-based interpretation of the model by suggesting that enacted financial-management capability represents a broadly relevant performance resource across different stages of entrepreneurial experience.

5. Conclusion and Suggestion

This study develops an integrated framework linking digital financial capability, financial literacy, and financial capability with MSME performance, while exploring business experience as a potential source of heterogeneity. The findings are consistent with financial capability serving as an important behavioural mechanism: digital financial capability and financial literacy are positively associated with financial capability, and financial capability is positively associated with MSME performance. Financial literacy is not directly associated with MSME performance, but its significant indirect pathway through financial capability is consistent with indirect-only mediation. Digital financial capability shows both significant direct and indirect pathways, consistent with complementary partial mediation. These patterns support a capability-conversion interpretation in which cognitive financial knowledge and digital competence become more relevant to business outcomes when translated into practical financial-management behaviour. For the business experience analysis, partial measurement invariance was established through MICOM, allowing valid comparison of structural relationships across the two groups. The subsequent MGA revealed no statistically significant between-group differences in the effects of Digital Financial Capability, Financial Literacy, or Financial Capability on MSME Performance. Consequently, H8, H9, and H10 were not supported. These findings indicate that the core capability-conversion mechanism identified in this study is relatively stable across different levels of business experience.

The study's principal novelty lies in demonstrating two complementary findings: first, financial knowledge contributes to MSME performance primarily when translated into enacted financial capability; and second, this capability conversion mechanism does not significantly differ between less-experienced and more-experienced MSMEs. Thus, business experience does not appear to be the boundary condition initially expected. Instead, the ability to convert digital and financial resources into practical financial management behaviour emerges as the more fundamental mechanism underlying MSME performance.

These findings offer important theoretical implications by extending financial capability theory into the digital, demonstrating that digital financial capability is not merely a technological skill but a strategic enabler of financial behavior and business outcomes. The study also advances the literature by evidencing that the pathway from knowledge to performance is indirect and mediated, rather than linear, thereby refining existing models that treat financial literacy as a direct determinant of MSME performance. From a practical perspective, policymakers and stakeholders should shift their focus from knowledge based interventions toward capability based development, particularly by integrating digital financial tools into MSME training programs to enhance real world financial practices.
Furthermore, MSME practitioners are encouraged to move beyond understanding financial concepts and actively develop financial capability through the adoption of digital financial technologies and disciplined financial management practices. Future research should explore additional contextual moderators, such as technological readiness or market dynamics, and employ longitudinal designs to capture the evolution of financial capability over time. Overall, this study highlights that the synergy between digital and financial capabilities rather than standalone knowledge is essential for achieving sustainable MSME performance in the digital economy.

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