

FINANCIAL LITERACY AS A MEDIATOR: ENTREPRENEURIAL ORIENTATION AND FINTECH ADOPTION ON MSME FINANCIAL PERFORMANCE IN KEDIRI

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ABSTRACT

Despite the growing adoption of financial technology and entrepreneurial practices among MSMEs, limited attention has been given to the mechanisms through which these capabilities improve financial performance. This study examines the role of financial literacy as a mediating mechanism linking entrepreneurial orientation, fintech adoption, and MSME financial performance in Kediri City. Using a quantitative explanatory approach, data were collected from 195 MSMEs and analyzed using PLS-SEM. The findings show that entrepreneurial orientation positively affects financial literacy but does not directly affect financial performance. In contrast, fintech adoption has a significant direct effect on both financial literacy and financial performance. Financial literacy significantly improves financial performance and serves as a full mediator between entrepreneurial orientation and financial performance, and as a partial mediator between fintech adoption and financial performance. The study concludes that financial literacy is a key mechanism through which entrepreneurial and technological capabilities are translated into financial outcomes. This study contributes to MSME performance literature by integrating financial literacy into a mediation framework and offers practical implications for policymakers, financial institutions, and fintech providers in strengthening financial capability, digital adoption, and inclusive MSME empowerment.

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in national and

global economic development. This sector contributes to economic growth through job creation, productive activity, and value generation across local and regional markets (Seva, 2025).

Beyond macroeconomic contribution, MSMEs support a people-centered economic system by expanding employment opportunities, diversifying products and services, and strengthening local production networks. They are particularly important in regions where large-scale industries remain limited because they provide accessible livelihood opportunities for broad segments of society (Shrivastava & Sahu, 2025).

Empirical studies show that MSMEs contribute substantially to Gross Domestic Product (GDP) and serve as a key driver of regional economic activity (Anuj et al., 2023). Through their multiplier effects, MSMEs connect suppliers, producers, distributors, and consumers across different sectors. However, MSME financial performance remains vulnerable to internal and external constraints. Financial performance reflects a firm's ability to manage resources, sustain operations, and achieve long-term business objectives. Therefore, identifying the factors that shape MSME financial performance is essential, particularly in contexts marked by resource limitations, market volatility, and uneven access to financial services. From the perspective of Islamic economics and business, strengthening MSME financial capability is also relevant to inclusive economic empowerment, equitable access to financial services, and the development of a resilient real sector.

One major challenge faced by MSMEs is limited access to financial resources. Mittal and Raman (2021) emphasize that financial constraints affect not only daily business operations but also the long-term capacity of MSMEs to expand and remain sustainable. Miran et al. (2025) further show that MSMEs in frontier, outermost, and underdeveloped regions encounter additional barriers to financial access, which may weaken their financial performance. These findings indicate that financial resource

constraints remain a persistent obstacle to MSME growth.

At the same time, digital transformation has reshaped MSME financial management, particularly during and after the COVID-19 pandemic. Gao et al. (2023) demonstrate that e-commerce and digital marketing adoption positively influenced MSME financial performance and sustainability during the pandemic. Similarly, Dewi et al. (2023) show that digitalization moderates the relationship between financial access and MSME performance. These studies suggest that financial access alone is insufficient; MSMEs also need digital capability and financial competence to convert available resources into improved performance.

Entrepreneurial orientation has become an important concept in entrepreneurship and strategic management. Wales (2016) defines entrepreneurial orientation as a strategic posture reflected in innovation, proactiveness, and risk-taking. This orientation enables firms to respond to competitive pressure, identify opportunities, and adapt rapidly and effectively to dynamic environments.

Empirical evidence indicates that entrepreneurial orientation is closely related to MSME performance. Maesaroh et al. (2023) show that financial availability affects MSME performance through two mechanisms, namely entrepreneurial orientation and business owners' rational decision-making. Clark et al. (2024) also support examining entrepreneurial orientation at the individual level, showing that it can predict entrepreneurial behavior, strategic action, and long-term business performance.

In addition to entrepreneurial orientation, financial technology, or fintech, has transformed the financial sector over the past decade. Rizvi et al. (2024) argue that the

interaction between fintech, digital adoption, and innovation has reshaped financial services and created new opportunities for economic growth. For MSMEs, fintech adoption can improve operational efficiency, expand market reach, and facilitate access to financial services (Naveen, 2024). Nugraha et al. (2022) further explain that fintech adoption among Indonesian MSMEs is shaped by context-specific factors and is primarily driven by the need to improve efficiency and broaden market access. Bian et al. (2024) also show that fintech adoption can improve several financial performance indicators.

The growing role of fintech has increased the importance of financial literacy. In the digital economy, financial literacy enables individuals and organizations to understand, evaluate, and use financial resources effectively (Hidayat-ur-Rehman, 2025). Setiawati et al. (2025) developed a financial literacy model for measuring MSME financial performance and emphasized that sound financial understanding supports effective business decision-making. Mulyadi (2024) also found that financial literacy and financial behavior positively influence MSME performance, with digital competence strengthening this relationship. In Indonesia, this issue is particularly urgent because the National Survey of Financial Literacy and Inclusion conducted by the Financial Services Authority (OJK) shows that national financial literacy still requires substantial improvement (OJK, 2022).

Recent studies have also confirmed the strategic role of financial literacy in explaining financial outcomes. Buchdadi et al. (2020), in a study involving 70 MSME owners in Brebes Regency, found that financial literacy directly affects MSME performance and mediates the relationship between financial access, financial risk attitude, and business performance.

Hidayat-ur-Rehman (2025) shows that digital transformation significantly enhances sustainable performance, with fintech adoption and competitiveness serving as key mediating mechanisms. The study further highlights financial literacy as an important moderator that strengthens the effects of digital transformation on fintech adoption and competitiveness, although its direct effect on sustainable performance is less pronounced. In the Indonesian context, Hutauruk et al. (2024) found that financial management behavior mediates the effect of financial literacy on MSME financial performance.

Despite this growing research, existing studies still examine entrepreneurial orientation, fintech adoption, financial literacy, and MSME performance separately. Most prior work emphasizes the direct effects of entrepreneurial orientation or fintech adoption on performance, without sufficiently explaining the mechanisms through which these capabilities produce financial outcomes. In addition, findings on the direct effect of entrepreneurial orientation on financial performance remain inconsistent. This limitation highlights the need for an integrated framework that explains how entrepreneurial and technological capabilities are translated, through financial literacy, into measurable MSME financial performance.

To address this gap, this study positions financial literacy not only as an independent determinant but also as a mediating mechanism. Financial literacy enables MSME owners to interpret financial information, manage risk, allocate capital, and use digital financial tools effectively. In this sense, financial literacy bridges entrepreneurial orientation, fintech adoption, and financial performance. The integration of these variables is important because MSMEs require not only entrepreneurial capa-

bility and access to technology, but also financial knowledge to convert these resources into sustainable outcomes. Their flexibility enables them to adapt to changing economic conditions and function as economic stabilizers during periods of uncertainty (Singh & Gupta, 2023).

Kediri City provides a relevant empirical context for examining this relationship. As one of the economic centers in East Java, Kediri has a high concentration of MSMEs and varying levels of technology adoption among business actors. According to data from the Central Bureau of Statistics (BPS), Kediri City had 38,806 MSMEs in 2023 (Prodjo, 2023). Data from the Department of Cooperatives also show that the number of MSMEs increased by 21% between 2022 and 2023, indicating a high level of entrepreneurial activity in the region (Kompas TV, 2023). MSMEs therefore play an important role in the local economy by generating employment opportunities and supporting regional economic development (Muchson et al., 2024).

Accordingly, this study examines the mediating role of financial literacy in the relationship between entrepreneurial orientation, fintech adoption, and MSME financial performance in Kediri City. The study contributes to MSME performance literature by positioning financial literacy as a mediating capability that explains how entrepreneurial and technological resources are translated into financial outcomes. In the context of Islamic economics and business, the findings also offer insights into strengthening inclusive financial capability, MSME empowerment, and real-sector resilience. Practically, the study provides implications for policymakers, financial institutions, fintech providers, and MSME development agencies in designing integrated programs that strengthen financial literacy,

promote effective fintech adoption, and improve MSME financial sustainability.

LITERATURE REVIEW

MSME Financial Performance

MSME financial performance reflects a firm's ability to manage financial resources to achieve long-term business objectives. It extends beyond profitability to include operational efficiency, liquidity, and business sustainability. For MSMEs, achieving strong financial performance remains challenging because these firms often face limited financial resources, managerial constraints, and restricted access to formal financial services. Mittal and Raman (2021) emphasize that financial constraints affect not only day-to-day operations but also the long-term capacity of MSMEs to grow and expand. Miran et al. (2025) further identify that MSMEs in remote areas encounter additional barriers to accessing financial services.

Digital transformation has reshaped MSME financial management by improving access, efficiency, and competitiveness. Gao et al. (2023) demonstrate that e-commerce and digital marketing adoption positively affected MSME financial performance during the COVID-19 pandemic. Dewi et al. (2023) further show that digitalization moderates the relationship between financial access and MSME performance. In this regard, Nugraheni et al. (2025) argue that technology integration enhances MSME operational efficiency and competitiveness. Thus, financial access alone is insufficient; MSMEs also need digital capability and sound financial decision-making.

Financial literacy has also been identified as a significant predictor of MSME financial performance (Setiawati et al., 2025). Mulyadi et al. (2024) propose a financial literacy model for

measuring MSME financial performance and show that financial literacy and financial behavior are associated with MSME performance. These studies indicate that MSME financial performance is shaped not only by access to resources, but also by business owners' ability to manage, interpret, and use financial information effectively.

The relationship between entrepreneurial orientation and MSME performance is also complex. Maesaroh et al. (2023) posit that financial availability influences MSME performance through the mediating mechanisms of entrepreneurial orientation and business owners' rationality. Ruiz et al. (2024) also show that financial planning capabilities and sound decision-making are significant predictors of MSME financial performance. Taken together, these studies indicate that MSME financial performance depends on the interaction between financial access, digital capability, entrepreneurial behavior, and financial decision-making.

Entrepreneurial Orientation

Entrepreneurial orientation is a fundamental concept in entrepreneurship and strategic management. Wales (2016) defines entrepreneurial orientation as a construct that reflects an organization's tendency to engage in entrepreneurial behavior characterized by innovativeness, proactiveness, and risk-taking. Entrepreneurial orientation enables firms to identify opportunities, respond to competitive pressure, and adapt to changing business environments.

The literature on entrepreneurial orientation has developed with increasing conceptual and methodological refinement. Covin and Wales (2019) argue that high-quality research in this field requires comprehensive methodological approaches and clearly defined conceptual frameworks. Wales et al. (2020)

further posit that entrepreneurial orientation should be conceptualized as a multilevel construct that captures different levels of analysis within organizations. In addition, entrepreneurial mindsets contribute to business sustainability by encouraging innovation and efficient resource management (Waqar et al., 2026).

At the individual level, Clark et al. (2024) reinforce the validity of examining entrepreneurial orientation by showing that individual entrepreneurial orientation predicts entrepreneurial behavior and business performance. However, measurement remains a key methodological issue. Covin and Wales (2012) identify several measurement challenges and recommend more rigorous approaches to assessing the construct. In international contexts, Wales et al. (2019) show that entrepreneurial orientation varies across cultural settings. Similarly, Basco et al. (2020), through a multigroup analysis in China, Mexico, and Spain, reveal that the relationship between entrepreneurial orientation and firm performance differs across national contexts.

Overall, entrepreneurial orientation influences organizational behavior and performance outcomes in two ways. First, it functions as a strategic orientation that guides opportunity recognition, innovation, and risk-taking. Second, it operates as a dynamic capability that can be developed to achieve sustainable competitive advantage. For MSMEs, entrepreneurial orientation is particularly important because it helps business owners respond to resource limitations, market uncertainty, and competitive pressure.

Financial Technology

The rapid development of financial technology, or fintech, has transformed the global financial industry. Rizvi et al. (2024)

emphasize that the synergy between fintech, digital adoption, and innovation has created a paradigm shift in the financial landscape and opened new opportunities for economic growth. Fintech adoption has become increasingly important as consumers and businesses demand financial services that are faster, more efficient, and more accessible. Kajol et al. (2022) observe that digital financial transactions have become a major focus of academic research because of their significant impact on financial institutions' performance.

Bian et al. (2024) find that institutions adopting fintech technologies experience significant improvements across multiple financial performance metrics. Fintech adoption enhances operational efficiency, reduces transaction costs, and contributes to revenue growth and profitability. Several studies have also identified key drivers of fintech adoption. Xie et al. (2021) show that perceived value and perceived risk are critical factors influencing fintech platform adoption. Nugraha et al. (2022) report that MSMEs primarily adopt fintech to improve operational efficiency and expand market access. Fintech also improves MSME operational efficiency by automating business processes, including digital lending and payment systems (Samanta et al., 2024).

Theoretical frameworks for understanding fintech adoption have evolved beyond traditional technology acceptance models. Hu et al. (2019) employed an extended Technology Acceptance Model (TAM) to explain behavioral intentions toward fintech service adoption. Chan et al. (2022) posit that social, technological, and individual factors interact in shaping fintech adoption decisions. Empirical evidence generally indicates that fintech adoption positively affects financial performance. Mirza et al. (2023) demonstrate that fintech adoption facilitates the development of sustainable financial

products, while Khera et al. (2022) show that fintech significantly enhances financial inclusion. These findings indicate that fintech is not merely a technological tool but also a strategic resource for improving financial access, efficiency, and performance.

Financial Literacy

The digital era has transformed the business and financial landscape, making financial literacy essential for effective financial resource management. The Organization for Economic Co-operation and Development (OECD) defines financial literacy as a combination of knowledge, skills, attitudes, and behaviors required to make sound financial decisions (Lusardi, 2019). In the context of MSMEs, financial literacy enables business owners to understand financial products, manage cash flow, assess risk, and make informed business decisions.

The Theory of Planned Behavior provides a relevant theoretical framework for explaining how financial literacy influences financial behavior. Arianti (2021) argues that higher financial literacy increases perceived behavioral control, thereby mediating the relationship between financial literacy and actual financial performance. Rodriguez et al. (2024) report that financial literacy has a strong direct effect on spending behavior, with a coefficient of 1.167. In Indonesia, the need to improve financial literacy remains important. The Financial Literacy and Inclusion Survey conducted by the OJK reveals that the national level of financial literacy still requires substantial improvement (OJK, 2022).

Empirical studies consistently confirm the role of financial literacy as a significant mediating variable. Buchdadi et al. (2020) demonstrate that financial literacy directly influences MSME performance and mediates

the relationships among access to finance, financial risk attitudes, and business performance. MSMEs with higher levels of financial literacy tend to be more competitive, better at managing risks, and more capable of addressing challenges associated with business growth (Csiszarik-Kocsir & Molnar, 2025).

Demographic and organizational characteristics may also influence the relationship between financial literacy and MSME performance. Evidence from a study of 550 MSMEs in the Special Capital Region of Jakarta shows that owner gender, firm size, firm age, and number of employees moderate the relationships among financial literacy, financial access, financial attitudes, competitive advantage, and MSME performance (Hererra et al., 2023).

Conceptual Framework and Relationships among Variables

Prior studies show that MSME performance is shaped by financial access, adoption of digital technology, financial literacy, and entrepreneurial orientation. Financial constraints limit business growth, while fintech improves efficiency and expands access to financial services. Financial literacy strengthens financial decision-making, whereas entrepreneurial orientation supports innovation, proactiveness, and resilience under uncertainty. From the perspective of Islamic economics and business, MSME financial capability is also linked to inclusive entrepreneurship, equitable financial access, real-sector resilience, and socio-economic sustainability.

However, prior studies often examine these determinants separately. The mediating role of financial literacy in linking entrepreneurial orientation, fintech adoption, and MSME financial performance remains underexplored, particularly in local MSME contexts.

This study addresses this gap by testing an integrated model that positions financial literacy as the mechanism translating entrepreneurial and technological capabilities into MSME financial performance in Kediri City.

Hypothesis Development

Entrepreneurial Orientation and Financial Literacy

Entrepreneurial orientation enhances financial literacy among MSME owners by encouraging proactive, innovative, and risk-taking behaviors that promote learning and financial knowledge acquisition. Firms with strong entrepreneurial orientation are more likely to engage with financial information, improve financial decision-making, and develop better financial understanding (Clark et al., 2024; Wales, 2016). Empirical evidence also shows that entrepreneurial activities are closely linked to financial capability, planning, and resource management, which are key elements of financial literacy (Culebro-Martínez et al., 2024; Desai et al., 2024; Xu & Jiang, 2024). Therefore, entrepreneurial orientation is expected to positively affect financial literacy among MSMEs.

H1: Entrepreneurial Orientation positively affects Financial Literacy.

Entrepreneurial Orientation and MSME Financial Performance

Entrepreneurial orientation enhances MSME financial performance by promoting proactive, innovative, and risk-taking behaviors that improve opportunity recognition and resource utilization. Firms with strong entrepreneurial orientation tend to adopt competitive strategies and responsive decision-making, which lead to superior financial outcomes (Basco et al., 2020; Wales, 2016). Empirical evidence also shows that innovation capability

and strategic flexibility driven by entrepreneurial orientation significantly strengthen firm performance (Suder et al., 2025; Sungthong et al., 2023). Therefore, entrepreneurial orientation is expected to positively affect MSME financial performance.

H2: Entrepreneurial Orientation positively affects MSME Financial Performance.

Financial Technology and Financial Literacy

Financial technology enhances financial literacy by providing access to digital financial tools, financial information, and real-time financial services that improve understanding and decision-making. Through continuous interaction with digital platforms, individuals and MSMEs develop greater financial awareness and financial management skills (Hu et al., 2019; Xie et al., 2021). Empirical evidence also shows that fintech integration contributes to improved financial knowledge within digital financial ecosystems (Al Suwaidi & Mertzanis, 2024; Amnas et al., 2024). Therefore, financial technology is expected to positively affect financial literacy.

H3: Financial Technology positively affects Financial Literacy.

Financial Technology and MSME Financial Performance

Financial technology improves MSME financial performance by increasing efficiency, easing access to financial services, and enhancing financial decision-making. Digital payments and online financing help businesses reduce costs, improve cash flow, and expand financial access, thereby contributing to better performance outcomes (Li et al., 2025; Lontchi et al., 2023). Fintech also strengthens competitiveness and operational effectiveness, particularly in dynamic and emerging markets (Alshannag et al., 2025; Rahadjeng et al., 2023).

Therefore, financial technology is expected to positively affect MSME financial performance.

H4: Financial Technology positively affects MSME Financial Performance.

Financial Literacy and MSME Financial Performance

Financial literacy improves MSME financial performance by enhancing entrepreneurs' ability to manage finances, make informed decisions, and allocate resources effectively. Higher financial literacy enables business owners to understand financial products, control cash flow, and reduce financial risks, leading to improved business outcomes (Culebro-Martínez et al., 2024; Lusardi, 2019). Empirical evidence also shows that financial literacy positively influences firm performance both directly and through improved financial management behavior and access to finance (Buchdadi et al., 2020; Rahadjeng et al., 2023). Therefore, financial literacy is expected to positively affect MSME financial performance.

H5: Financial Literacy positively affects MSME Financial Performance.

Financial Literacy as a Mediator between Entrepreneurial Orientation and MSME Financial Performance

Entrepreneurial orientation supports firm performance through innovativeness, proactiveness, and risk-taking, which encourage better strategic and financial outcomes (Basco et al., 2020; Wales, 2016). Financial literacy strengthens this relationship by improving entrepreneurs' ability to manage financial resources, evaluate risks, and make informed decisions. Studies indicate that financial literacy directly improves MSME performance and functions as a mechanism that translates entrepreneurial capabilities into

effective financial practices and outcomes (Culebro-Martínez et al., 2024; Xu & Jiang, 2024). Thus, financial literacy is expected to mediate the relationship between entrepreneurial orientation and MSME financial performance.

H6: Entrepreneurial Orientation positively affects MSME Financial Performance with mediating effect of Financial Literacy.

Financial Literacy as a Mediator between Financial Technology and MSME Financial Performance

Financial technology contributes to MSME financial performance by increasing efficiency, expanding access to financial services, and facilitating faster transactions. However, the effectiveness of fintech adoption depends partly on financial literacy because financially

literate entrepreneurs are better able to understand, use, and manage digital financial tools. Studies show that financial literacy strengthens the benefits of fintech by improving financial decision-making and resource management (Hidayat-ur-Rehman, 2025; Kurniasari et al., 2025). Financial literacy has also been identified as a mediating factor that enhances the impact of fintech on firm performance through more effective and informed use of financial technologies (Jamilah & Mardiana, 2024; Lontchi et al., 2023). Thus, financial literacy is expected to mediate the relationship between financial technology and MSME financial performance.

H7: Financial Technology positively affects MSME Financial Performance with mediating effect of Financial Literacy.

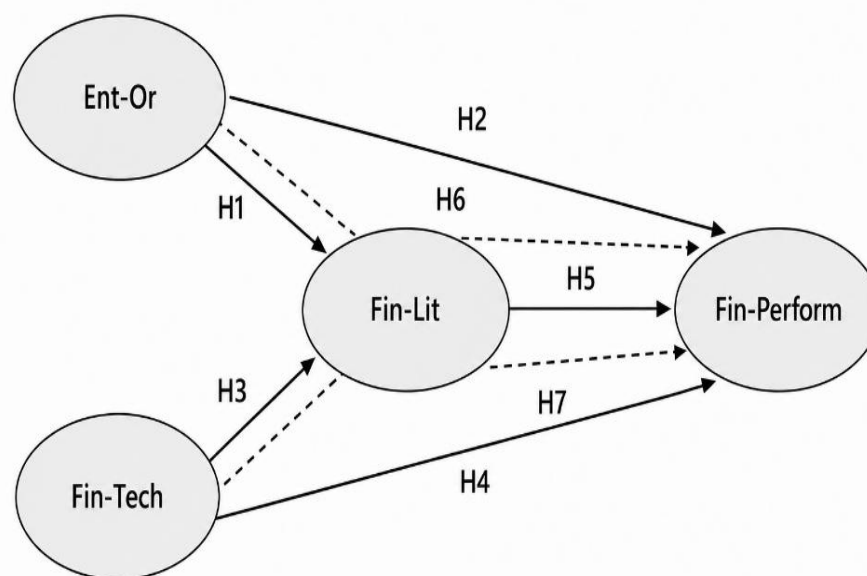


Figure 1. Conceptual Framework and Hypothesis

Source: Modified by the authors, 2025.

RESEARCH METHOD

This study used a quantitative explanatory design to test the effects of Entrepreneurial Orientation and Financial Technology on MSME Financial Performance, with Financial Literacy specified as a mediating variable. Partial Least Squares Structural Equation Modeling (PLS-SEM) was applied because the model contains multiple latent constructs, mediation paths, and predictive relationships among variables.

The population comprised MSMEs registered and actively operating in Kediri City, totaling 15,847 business units based on data from Kediri City's Department of Cooperatives and MSME in 2024. This study applied purposive sampling to ensure that respondents met criteria relevant to the research objectives.

The inclusion criteria were MSME owners or managers who: (1) had operated the business for at least two years, (2) generated annual revenues ranging from IDR 50 million to IDR 2.5 billion, (3) had access to or were familiar with digital financial services or fintech facilities, and (4) were domiciled in Kediri City. These criteria ensured that respondents had sufficient business experience, potential exposure to fintech, and familiarity with financial management practices relevant to the constructs examined.

A total of 195 respondents were included in the final analysis. The sample size was considered adequate for PLS-SEM based on the 10-times rule, which requires the minimum sample to be at least 10 times the largest number of structural paths directed at an endogenous construct. In this study, the largest number of paths directed at a single endogenous construct were three, namely the paths from Entrepreneurial Orientation, Financial Technology, and Financial Literacy to

Financial Performance. Therefore, the minimum recommended sample size was 30 respondents, and the final sample of 195 respondents exceeded this threshold.

The sample size also met the recommended statistical requirements for PLS-SEM studies, which generally suggest at least 100 observations to obtain adequate estimation accuracy and predictive reliability in structural models involving mediation effects. Therefore, the sample of 195 respondents was considered sufficient to support robust model estimation. The research instrument was developed as a structured questionnaire using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Entrepreneurial Orientation, Financial Technology, Financial Literacy, and Financial Performance were each measured using five indicators adapted from relevant prior studies.

The measurement items were adapted from previously validated instruments and modified to fit the context of MSMEs in Kediri City, Indonesia. All questionnaire items were translated and adjusted to ensure clarity, contextual relevance, and suitability for MSME owners and managers. Before the main survey, the instrument was reviewed to assess the comprehensibility and relevance of the indicators to respondents' business conditions.

Entrepreneurial Orientation was measured using an adapted scale from Covin and Slevin (1989) and Wales (2016), covering innovativeness, proactiveness, and risk-taking. Financial Technology was conceptualized as the extent to which MSMEs use fintech to support business financial activities. This construct was measured using adapted scales from Hu et al. (2019) and Nugraha et al. (2022), covering four core dimensions of fintech: payment, lending, investment, and financial management. Thus, the Financial Technology

construct reflects the actual use and accessibility of fintech services in MSME operations rather than merely perceived usefulness or intention to adopt. Financial Literacy was measured using adapted scales from Rodriguez et al. (2024), covering financial knowledge, financial attitudes, and financial behavior. The validity and reliability of the constructs were assessed through convergent validity, discriminant validity, composite reliability, and Cronbach's alpha within the PLS-SEM framework.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4.0. This approach was selected because it supports the estimation of complex mediation models, accommodates non-normal data, is suitable for moderate sample sizes, and emphasizes prediction (Hair et al., 2021). Mediation effects were assessed through bootstrapping at $\alpha = 0.05$ using a two-tailed test. Statistical significance was determined by t-statistics greater than 1.96 and p-values below 0.05 (Hair et al., 2021).

This study adhered to established research ethics principles, including informed consent, confidentiality, voluntary participation, data protection, and the no-harm principle. Several limitations should be acknowledged. First, the cross-sectional design does not allow the observation of changes over time. Second, the use of self-reported data may introduce response bias. Third, the geographical scope is limited to Kediri City. Fourth, common method bias may occur

because the data were collected using a single survey instrument. Fifth, stronger causal validation requires future studies using longitudinal or experimental designs.

RESULTS AND DISCUSSION

Results

Characteristics of the Respondents

The survey included 195 MSME owners in Kediri City. As shown in Table 1, respondents were predominantly female (148; 75.9%) and mostly mature business actors, especially those aged 45–55 years (66; 33.8%) and 35–44 years (64; 32.8%). Most had completed senior high school (113; 57.9%), followed by bachelor's degree holders (44; 22.6%), indicating that the sampled MSMEs were largely managed by women and experienced owners with secondary education backgrounds.

Business characteristics show a strong concentration in the food and beverage sector (140; 71.8%), while nearly half had operated for more than six years (91; 46.7%). Nevertheless, most remained micro-scale, with 142 respondents (72.8%) reporting no employees. Active fintech use was also limited, as only 74 respondents (37.9%) used fintech services, while 121 (62.1%) did not. Overall, the sample represents established but small-scale MSMEs with uneven fintech adoption, supporting the study's focus on financial literacy, fintech-related access, and financial performance relationships among local MSMEs.

Table 1. Respondent Characteristics

Characteristics	Category	Frequency (n)	Percentage (%)
Gender	Male	47	24.1
	Female	148	75.9
Age	< 25 years	9	4.6
	25–34 years	20	10.3
	35–44 years	64	32.8

Characteristics	Category	Frequency (n)	Percentage (%)
Education	45–55 years	66	33.8
	> 55 years	36	18.5
	Elementary/Junior high school	20	10.3
	Senior high school	113	57.9
	Diploma	12	6.2
	Bachelor's degree	44	22.6
Type of business	Postgraduate	6	3.1
	Food and beverage	140	71.8
	Fashion	13	6.7
	Services	16	8.2
	Others	26	13.3
Business duration	< 1 year	19	9.7
	1–3 years	38	19.5
	4–6 years	47	24.1
	> 6 years	91	46.7
Number of employees	None	142	72.8
	1–5 employees	48	24.6
	6–10 employees	3	1.5
	> 10 employees	2	1.0
Active fintech use	Yes	74	37.9
	No	121	62.1

Source: processed by the authors, 2025

Construct Validity and Reliability

Construct validity and reliability were assessed through convergent validity, internal consistency reliability, and discriminant validity. As shown in Table 2, all outer loadings ranged from 0.759 to 0.956, exceeding the recommended threshold of 0.70. The AVE values ranged from 0.677 to 0.811, indicating that each construct explained more than half of the variance in its indicators. These results confirm that the indicators adequately represent their respective latent constructs.

The reliability results further show that Cronbach's alpha values ranged from 0.879 to 0.940, while composite reliability values ranged from 0.913 to 0.955. These values indicate strong internal consistency across all constructs. Discriminant validity was assessed using the HTMT ratio, as presented in Table 3. All HTMT values were below 0.90, with the highest value of 0.674, confirming that the constructs are empirically distinct. Overall, the

measurement model satisfies the requirements for validity and reliability and is suitable for structural model assessment.

Structural Model Quality

The structural model quality was assessed using inner VIF and R^2 values. As shown in Table 4, all inner VIF values range from 1.385 to 1.761, which are below the recommended threshold of 5.00. This indicates that multicollinearity is not a concern in the structural model. The R^2 value for Financial Literacy was 0.278, indicating that Entrepreneurial Orientation and Financial Technology explain 27.8% of its variance. Meanwhile, the R^2 value for Financial Performance was 0.303, showing that Entrepreneurial Orientation, Financial Technology, and Financial Literacy explain 30.3% of its variance. These results suggest that the model has acceptable structural quality for hypothesis testing.

Table 2. Measurement Model Assessment

Constructs	Item Code	Outer Loading	AVE	Cronbach's Alpha	Composite Reliability
Entrepreneurial Orientation	EO1	0.759	0.677	0.879	0.913
	EO2	0.862			
	EO3	0.906			
	EO4	0.771			
	EO5	0.807			
Financial Technology	FINT1	0.907	0.801	0.938	0.952
	FINT2	0.899			
	FINT3	0.851			
	FINT4	0.902			
	FINT5	0.913			
Financial Literacy	FIN-LIT1	0.930	0.811	0.940	0.955
	FIN-LIT2	0.891			
	FIN-LIT3	0.956			
	FIN-LIT4	0.759			
	FIN-LIT5	0.950			
Financial Performance	FP1	0.860	0.713	0.899	0.925
	FP2	0.788			
	FP3	0.875			
	FP4	0.890			
	FP5	0.806			

Source: Data processed by SmartPLS, 2025.

Table 3. Heterotrait-Monotrait Ratio (HTMT)

Variable Construct	ENT-OR	FIN-LIT	FIN-PERFORMANCE
ENT-OR			
FIN-LIT	0.522		
FIN-PERFORMANCE	0.427	0.505	
FIN-TECH	0.674	0.481	0.496

Note: Ent-Or = Entrepreneurial Orientation; Fin-Tech = Financial Technology; Fin-Lit = Financial Literacy; Fin-Perform = MSME Financial Performance. Data was processed using SmartPLS, 2025.

Table 4. Assessment of Structural Model Quality Criteria

Endogenous Construct	Predictor Construct	Inner VIF	R ²
Financial Literacy	Entrepreneurial Orientation	1.618	0.278
	Financial Technology	1.618	
Financial Performance	Entrepreneurial Orientation	1.761	0.303
	Financial Technology	1.715	
	Financial Literacy	1.385	

Source: Data processed by SmartPLS, 2025.

Predictive Relevance

Predictive relevance was assessed using the PLSpredict LV Summary. As shown in Table 5, the Q²_predict values for Financial Literacy and Financial Performance were 0.245

and 0.203, respectively. Since both values are greater than zero, the model demonstrates predictive relevance for the endogenous constructs. The RMSE and MAE values also indicate an acceptable level of prediction error.

These findings show that the model has adequate predictive capability in explaining Financial Literacy and Financial Performance.

Model Fit

Model fit was assessed using SRMR, NFI, and RMS Theta. As presented in Table 6, the SRMR value for both the saturated and estimated models was 0.075, below the

recommended threshold of 0.08. The NFI value of 0.850 and RMS Theta value of 0.074 further support acceptable model fit. These results indicate that the proposed model sufficiently represents the empirical data and provides an adequate basis for testing the structural relationships among the constructs in this study without indicating substantial misspecification in the model overall.

Table 5. PLSpredict LV Summary

Construct	RMSE	MAE	Q ² _predict
Financial Literacy	0.886	0.645	0.245
Financial Performance	0.907	0.694	0.203

Note: RMSE = Root Mean Square Error; MAE = Mean Absolute Error; Q²_predict = predictive relevance value. A Q²_predict value greater than zero indicates that the model has predictive relevance for the endogenous construct. Data was processed using SmartPLS, 2025

Table 6. Model Fit Indices

Fit Index	Saturated Model	Estimated Model
SRMR	0.075	0.075
d_ULS	1.178	1.178
d_G	0.542	0.542
Chi-Square	557.558	557.558
NFI	0.850	0.850
RMS Theta	0.074	0.074

Note: SRMR = Standardized Root Mean Square Residual; d_ULS = squared Euclidean distance; d_G = geodesic distance; NFI = Normed Fit Index; RMS Theta = root mean square residual covariance. An SRMR value below 0.08 indicates acceptable model fit, while RMS Theta below 0.12 suggests adequate reflective model specification. Data was processed using SmartPLS, 2025.

Hypothesis Testing

Hypothesis testing was performed using the SmartPLS bootstrapping procedure to examine the significance of both direct and mediated relationships. The assessment was based on path coefficients, standard deviations, t-values, and p-values, with statistical significance determined by t-values above 1.96 and p-values below 0.05. As reported in Table 7, six hypotheses were supported, while one was rejected. The results highlight the central role of Financial Literacy, not only as a direct predictor of MSME Financial Performance but

also as a mediating mechanism that translates Entrepreneurial Orientation and Financial Technology into financial outcomes.

The direct effect results show that Entrepreneurial Orientation had a positive and significant effect on Financial Literacy ($\beta = 0.321$; $t = 4.047$; $p = 0.000$), supporting H1. However, Entrepreneurial Orientation did not significantly affect Financial Performance ($\beta = 0.061$; $t = 0.726$; $p = 0.468$), leading to the rejection of H2. Financial Technology had a positive and significant effect on Financial Literacy ($\beta = 0.264$; $t = 3.027$; $p = 0.003$), supporting H3, and also significantly affected

Financial Performance ($\beta = 0.271$; $t = 3.395$; $p = 0.001$), supporting H4. In addition, Financial Literacy had a positive and significant effect on Financial Performance ($\beta = 0.324$; $t = 3.729$; $p = 0.000$), supporting H5.

The mediated effect results show that Financial Literacy significantly mediated the relationship between Entrepreneurial Orientation and Financial Performance ($\beta = 0.104$; $t = 2.612$; $p = 0.009$), supporting H6. Since

the direct effect of Entrepreneurial Orientation on Financial Performance was not significant, this result indicates full mediation. Financial Literacy also significantly mediated the relationship between Financial Technology and Financial Performance ($\beta = 0.086$; $t = 2.660$; $p = 0.008$), supporting H7. Since the direct effect of Financial Technology on Financial Performance remained significant, this result indicates partial mediation.

Table 7. Path Coefficient Results

Relationship	Coefficient	STDEV	t	p	f ²	Decision
Direct Effect						
Ent-Or → Fin-Lit	0.321	0.079	4.047	0.000	0.088	H1 Accepted
Ent-Or → Fin-Perform	0.061	0.084	0.726	0.468	0.003	H2 Rejected
Fin-Tech → Fin-Lit	0.264	0.087	3.027	0.003	0.060	H3 Accepted
Fin-Tech → Fin-Perform	0.271	0.080	3.395	0.001	0.062	H4 Accepted
Fin-Lit → Fin-Perform	0.324	0.087	3.729	0.000	0.109	H5 Accepted
Mediated Effect						
Ent-Or → Fin-Lit → Fin-Perform	0.104	0.040	2.612	0.009	—	H6 Accepted
Fin-Tech → Fin-Lit → Fin-Perform	0.086	0.032	2.660	0.008	—	H7 Accepted

Note: Ent-Or = Entrepreneurial Orientation; Fin-Tech = Financial Technology; Fin-Lit = Financial Literacy; Fin-Perform = MSME Financial Performance. STDEV = standard deviation; t = t-statistic; p = probability value; f² = effect size. Data was processed using SmartPLS, 2025.

Discussion

The finding that Entrepreneurial Orientation has a significant effect on Financial Literacy indicates that MSME owners with stronger innovativeness, proactiveness, and risk-taking tendencies are more likely to develop financial knowledge and financial awareness. This result suggests that entrepreneurial behavior requires more than opportunity recognition; it also requires the ability to understand financial consequences, manage resources, and assess business risks. This finding is consistent with Xu and Jiang (2024), who show that financial knowledge creates value in entrepreneurial behavior. It also supports Liu et al. (2025), Rapina et al. (2023), and Alshebami and Al Marri (2022), who link entrepreneurial characteristics

with financial knowledge and financial behavior. In this study, entrepreneurial orientation appears to encourage MSME owners to strengthen their financial capability as part of their business decision-making process.

However, Entrepreneurial Orientation does not have a significant direct effect on MSME Financial Performance. This result shows that entrepreneurial characteristics alone are not sufficient to improve financial outcomes. Although innovation, proactiveness, and risk-taking may help business owners identify opportunities, these characteristics do not automatically lead to better profitability, cash flow, or financial stability. This finding is consistent with Šlogar et al. (2023), who found that entrepreneurial orientation does not always produce higher financial performance. It

also aligns with Suder et al. (2025), who argue that the effect of entrepreneurial orientation depends on contextual conditions, and with Sungthong et al. (2023), who emphasize the role of mediating capabilities. Therefore, entrepreneurial orientation needs to be supported by financial literacy before it can contribute meaningfully to MSME financial performance.

The significant effect of Financial Technology on Financial Literacy shows that fintech use is associated with better financial understanding among MSME owners. Digital payment systems, digital financing, and transaction-recording applications expose business owners to financial information and financial practices in a more direct and practical way. This finding is consistent with Koskelainen et al. (2023), who argue that digital finance has changed the way financial literacy develops in the digital era. Al Suwaidi and Mertzanis (2024) also show that fintech development is closely related to financial literacy improvement. In the MSME context, fintech may function not only as a transaction tool but also as a learning medium that helps business owners understand financial products, monitor transactions, and improve financial decision-making (Zhao et al., 2024).

Financial Technology also has a significant direct effect on MSME Financial Performance. This result indicates that fintech adoption can support financial performance through more efficient transactions, easier access to financial services, and better financial record-keeping. For MSMEs, these functions are important because many small businesses still face limitations in financial administration and access to formal financing. This finding is consistent with Baker et al. (2023), Alshannag et al. (2025), and Li et al. (2025), who found that fintech can improve performance through efficiency, cost reduction, and service innovation.

It also supports Jamilah et al. (2024), who highlight the relevance of fintech for MSME performance. In this study, fintech appears to contribute to performance both as a practical business tool and as a channel for improving financial access.

The significant effect of Financial Literacy on MSME Financial Performance confirms that financial knowledge and financial management capability are important for business outcomes. MSME owners with better financial literacy are more capable of managing cash flow, planning capital use, assessing risks, and making informed financial decisions. This finding supports Culebro-Martínez et al. (2024), who show that entrepreneurs' financial literacy influences firm performance. It is also consistent with Setiawati et al. (2025), Miswanto et al. (2024), Abdallah et al. (2025), and Yuliani et al. (2025), who emphasize that financial literacy improves MSME performance through better planning, access to finance, and financial resource management. In this study, financial literacy serves as a practical capability that helps MSME owners convert knowledge into better financial outcomes.

The mediation results provide an important explanation for the non-significant direct relationship between Entrepreneurial Orientation and Financial Performance. Financial Literacy fully mediates this relationship, meaning that entrepreneurial orientation improves financial performance only when it is translated into financial understanding and financial management capability. This finding suggests that entrepreneurial orientation needs a financial capability pathway to become effective. MSME owners may be innovative and proactive, but without adequate financial literacy, they may not be able to manage risks, allocate capital properly, or evaluate business decisions

financially. This result is consistent with Pashaei et al. (2024), Desai et al. (2024), and Kang and Park (2024), who show that financial literacy helps transform entrepreneurial potential into more effective financial behavior and outcomes.

Financial Literacy also partially mediates the relationship between Financial Technology and MSME Financial Performance. This finding indicates that fintech can improve financial performance directly, but its effect becomes stronger when MSME owners have adequate financial literacy. In other words, fintech provides access to financial tools, while financial literacy determines how effectively those tools are understood and used. This result is consistent with Lontchi et al. (2023), Jamilah et al. (2024), Rahadjeng et al. (2023), Kurniasari et al. (2025), Rohaeni et al. (2025), and Kurniasari and Lestari (2024), who emphasize the importance of financial literacy in strengthening the benefits of fintech adoption. Therefore, fintech adoption should not be viewed only as a technological issue, but also as a financial capability issue.

From the perspective of Islamic economics, these findings are relevant to the broader agenda of inclusive and responsible economic empowerment. Financial literacy helps MSME owners make more prudent financial decisions, manage risks more carefully, and use financial technology more responsibly. These aspects are consistent with the principles of *maslahah*, equitable access to financial services, and real-sector resilience. However, this study does not measure Sharia compliance or Islamic fintech directly. Therefore, the Islamic economics perspective should be understood as a contextual interpretation rather than a separate empirical finding. In this sense, strengthening MSME financial literacy can support ethical, inclusive, and sustainable business development.

CONCLUSION

This study concludes that entrepreneurial orientation positively and significantly affects financial literacy but does not directly affect MSME financial performance. This indicates that innovativeness, proactiveness, and risk-taking do not automatically improve financial outcomes without adequate financial understanding. In contrast, financial technology positively and significantly affects both financial literacy and MSME financial performance, showing that fintech adoption supports performance through improved financial access, efficiency, and financial management.

Financial literacy serves as a mediating mechanism that explains how entrepreneurial orientation and fintech adoption translate into MSME financial performance. It fully mediates the relationship between entrepreneurial orientation and financial performance, indicating that entrepreneurial capability contributes to financial outcomes only when supported by financial knowledge and sound financial management. It also partially mediates the relationship between financial technology and financial performance, suggesting that fintech has a direct effect, but its impact is stronger when MSME owners have sufficient financial literacy.

These findings highlight the importance of strengthening financial literacy as a strategic MSME capability. Policymakers, financial institutions, fintech providers, and MSME development agencies should not only expand access to digital financial services but also improve MSME owners' ability to understand, evaluate, and use them effectively. From an Islamic economics perspective, MSME financial literacy supports inclusive financial empowerment, responsible technology use, and real-sector resilience.

Future research may examine digital financial literacy, financial behavior, and financial decision-making capability as specific dimensions of MSME financial competence. Further studies may also test financial literacy as both a mediating and moderating variable across different regional, sectoral, or institutional contexts. Longitudinal research is recommended to explain how financial literacy and fintech adoption shape MSME financial performance over time.

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