

# The Influence of Financial Literacy and Entrepreneurial Orientation on the Performance of MSMEs in Indonesia with Business Innovation as a Mediating Variable

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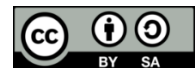
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## ABSTRACT

This study investigates the influence of financial literacy and entrepreneurial orientation on the performance of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, with business innovation acting as a mediating variable. A quantitative research design was employed, using data collected from 200 MSME owners and managers across diverse sectors through structured questionnaires based on a 5-point Likert scale. The data were analyzed using Structural Equation Modeling with Partial Least Squares (SEM-PLS 3.0). The results reveal that both financial literacy and entrepreneurial orientation have a positive and significant effect on MSME performance. Furthermore, business innovation significantly mediates the relationship between the two independent variables and business performance. These findings underscore the importance of financial capability, strategic entrepreneurial behavior, and innovation adoption in enhancing MSME sustainability and competitiveness. The study provides practical recommendations for policymakers and business development stakeholders to support integrated capacity-building efforts for MSMEs in Indonesia.

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## 1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in driving economic growth, employment, and innovation in Indonesia, accounting for over 99% of all businesses and contributing significantly to national GDP and labor absorption. Despite their pivotal role, many MSMEs face persistent challenges in improving business performance, particularly in the areas of financial management, strategic orientation, and innovation capacity, which are often linked to limited financial literacy

and underdeveloped entrepreneurial orientation. Limited access to capital remains a significant barrier, affecting their ability to invest in growth and innovation [1], [2], while the lack of financial literacy among MSME owners further hinders effective financial management and overall business performance [3]. In terms of innovation, many MSMEs struggle due to constrained resources and skills, even though product innovation is a key driver of growth [1], [3]. Strengthening strategic orientation through targeted managerial training can empower MSMEs to

navigate market dynamics more effectively and capitalize on emerging opportunities [1]. Although government policies are designed to support MSMEs, uneven implementation and limited access to necessary resources remain pressing challenges [1]. Therefore, enhancing access to technology, capital, and entrepreneurship training is essential to bolster MSME resilience and performance [2].

Financial literacy, defined as the ability to understand and effectively use financial concepts and tools, is a crucial competency for MSME operators, influencing decisions related to budgeting, investment, financing, and risk management. Low financial literacy often leads to poor planning, limited access to credit, and fragile business sustainability, whereas a solid grasp of financial principles enhances the effectiveness of financial management and contributes to long-term resilience [4], [5]. It enables MSMEs to identify opportunities, mitigate risks, and develop sound strategies crucial for business continuity [6]. Complementing this, entrepreneurial orientation—marked by innovativeness, proactiveness, and strategic risk-taking—serves as a dynamic capability that drives firm growth and competitive advantage, particularly in volatile markets [4]. Entrepreneurs who actively seek strategic opportunities and embrace innovation tend to outperform their peers, positioning themselves for success in evolving economic landscapes. Enhancing both financial literacy and entrepreneurial orientation is therefore essential, and it requires collaborative initiatives from governments, financial institutions, and NGOs to develop tailored financial education programs that improve financial practices and foster sustainable MSME growth [4], [5].

The relationship between financial literacy, entrepreneurial orientation, and business performance is not always straightforward, as recent studies suggest that business innovation—defined as the implementation of new ideas, products, services, or processes—serves as a crucial mediating variable that enhances these effects. Innovation enables MSMEs to adapt to shifting market demands, differentiate

themselves from competitors, and drive value creation, thereby amplifying the influence of both financial literacy and entrepreneurial orientation on performance outcomes. For example, one study revealed that entrepreneurial orientation did not directly improve MSME performance, but when mediated by business innovation, the impact became significant [7]. Similarly, innovation capability mediates the link between financial literacy and financial performance, boosting market-driven innovation and contributing to competitive advantage [8]. Entrepreneurial orientation, marked by innovativeness, proactiveness, and risk-taking, has also been shown to strengthen business model innovation, which in turn elevates business performance [9], with industry-specific evidence, such as in the coffee sector, demonstrating how innovation initiatives result in higher operational profits [10]. These findings underscore that innovation is a critical factor in converting entrepreneurial mindset and financial competence into tangible and sustained business success [8]. This study aims to explore the influence of financial literacy and entrepreneurial orientation on the performance of MSMEs in Indonesia, with a particular focus on the mediating role of business innovation.

## 2. LITERATURE REVIEW

### 2.1 Financial Literacy

Financial literacy is a vital factor influencing the performance and sustainability of Micro, Small, and Medium Enterprises (MSMEs), encompassing the knowledge, skills, and attitudes needed for effective financial management that supports business growth and resilience. It enables entrepreneurs to make informed decisions about cash flow, budgeting, credit access, and investment—skills essential for competing in dynamic markets. Financial literacy involves key elements such as knowledge, attitudes, and behaviors that shape financial decision-making [11], with entrepreneurs proficient in accounting and budgeting better equipped to sustain their businesses [12]. This competence enhances financial practices, helping MSMEs

seize opportunities and manage risks [4], and is linked to stronger financial outcomes among informed business owners [13]. Strengthening financial literacy requires targeted training and collaborative support from governments and financial institutions [4], [5]. Ultimately, it improves access to funding and decision-making, with effective budget control playing a key role in MSME success [11], [12].

## **2.2 Entrepreneurial Orientation**

Entrepreneurial orientation (EO) is a strategic framework that significantly enhances firm performance by fostering innovation, risk-taking, and proactiveness—three dimensions especially vital for MSMEs in navigating market uncertainty and gaining competitive advantage. Empirical studies consistently show that EO drives innovation, improves customer responsiveness, and supports strategic differentiation. Innovativeness encourages the pursuit of new ideas and positively affects performance metrics like gross-profit-margin [14]. Risk-taking, or the willingness to engage in uncertain ventures, contributes to performance through the risk-return tradeoff, though its impact may depend on other EO dimensions [15]; [14]. Proactiveness allows firms to anticipate market trends and respond swiftly, increasing strategic agility [15]. While EO's effects can vary by context, studies show similar EO profiles across industry types, with certain differences such as market share outcomes [14]. Environmental factors like industry turbulence and resource conditions also moderate the EO-performance relationship, with employee stability boosting market share, while rapid workforce growth may have adverse effects [14].

## **2.3 Business Innovation**

Innovation is a vital driver of survival and growth for Micro, Small, and Medium Enterprises (MSMEs), particularly in fast-changing and competitive markets. According to Schumpeter's theory, entrepreneurs act as change agents by introducing novel combinations that disrupt existing structures. For MSMEs, innovation supports adaptation to evolving consumer demands, boosts efficiency, and enables

unique value creation—especially relevant in Indonesia amid digital transformation and post-pandemic recovery. Innovation in business management enhances strategy, operations, and marketing, with leadership and an innovation-driven culture being essential for sustaining competitive advantage [16]. In Jember, for instance, MSMEs in the souvenir sector showed resilience during the Covid-19 pandemic by innovating based on consumer tastes [17]. Innovation also mediates the relationship between entrepreneurial orientation (EO) and business outcomes, driving improved performance across industries [18]. Product, process, and people innovations are key, with product innovation alone increasing competitive advantage by 53.1% [18]. These various forms of innovation—ranging from goods and services to processes and marketing—highlight the importance of promoting innovation at all levels to support MSME development [19].

## **2.4 MSME Performance**

The performance of Micro, Small, and Medium Enterprises (MSMEs) can be effectively assessed using both financial and non-financial indicators, as emphasized in Kaplan and Norton's Balanced Scorecard (BSC) framework, which offers a comprehensive view beyond traditional metrics. While indicators like profitability and revenue growth are essential, non-financial aspects such as customer satisfaction, product quality, and innovation are equally important [20], [21]. The BSC integrates four key perspectives: finance, customers, internal processes, and learning and growth, allowing for balanced performance evaluation [22], [23]. MSME success depends on internal capabilities—managerial skill, innovation, financial literacy, and entrepreneurial orientation (EO)—which support opportunity recognition and efficient resource use [20], [22], while external factors like market conditions and regulation also play a vital role [24]. The synergy between financial literacy, EO, and innovation enhances strategic decisions and competitiveness, in line with the BSC's focus on long-term value creation and performance sustainability [22].

## 2.5 Theoretical Framework and Hypotheses

This study integrates the Resource-Based View (RBV) and the Knowledge-Based View (KBV) as the underlying theoretical perspectives. RBV posits that firm performance is driven by unique, valuable, and inimitable resources—such as financial literacy and EO—while KBV highlights the role of knowledge and innovation as strategic assets for competitive advantage.

Based on the literature reviewed, the following hypotheses are proposed:

*H1: Financial literacy has a positive and significant effect on MSME performance.*

*H2: Entrepreneurial orientation has a positive and significant effect on MSME performance.*

*H3: Financial literacy has a positive and significant effect on business innovation.*

*H4: Entrepreneurial orientation has a positive and significant effect on business innovation.*

*H5: Business innovation has a positive and significant effect on MSME performance.*

*H6: Business innovation mediates the relationship between financial literacy and MSME performance.*

*H7: Business innovation mediates the relationship between entrepreneurial orientation and MSME performance.*

This conceptual framework provides the foundation for empirical testing using Structural Equation Modeling with Partial Least Squares (SEM-PLS 3) in the subsequent sections.

## 3. METHODS

### 3.1 Research Design

This study adopts a quantitative research design to examine the relationships between financial literacy, entrepreneurial orientation, business innovation, and MSME performance. The study employs a causal research approach to test the direct and indirect effects among variables through hypothesis testing. The data were analyzed using Structural Equation Modeling - Partial Least Squares (SEM-PLS) version 3.0, which is suitable for predictive and exploratory models involving complex relationships.

### 3.2 Population and Sample

The population of this study consists of owners or managers of Micro, Small, and Medium Enterprises (MSMEs) operating in various sectors across Indonesia. A non-probability purposive sampling technique was employed to select respondents who met specific criteria, including being active MSME owners or managers, having operated their businesses for at least two years, and possessing basic knowledge of business operations and decision-making. A total of 200 valid responses were collected and analyzed, fulfilling the minimum requirement for SEM-PLS analysis, which recommends a sample size of at least 10 times the maximum number of paths directed at any construct in the model.

### 3.3 Data Collection Technique

Data were collected using a structured questionnaire distributed both online and offline to reach MSME actors across various regions. The questionnaire consisted of two sections: the first gathered demographic information such as gender, age, education, type of business, and years in operation; the second measured research variables using statements rated on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Prior to full distribution, the questionnaire was pre-tested with 20 MSME respondents to ensure clarity, relevance, and reliability of the items.

### 3.4 Measurement of Variables

Each construct in the study was measured using validated indicators adapted from prior literature, with slight modifications to align with the Indonesian MSME context. Financial Literacy (FL) was adapted from Lusardi & Mitchell (2014) and assessed respondents' knowledge and application of financial concepts such as budgeting, saving, credit, and investment using four indicators. Entrepreneurial Orientation (EO), based on Lumpkin & Dess [25], was measured through five indicators reflecting innovativeness, proactiveness, and risk-taking. Business Innovation (BI) was evaluated using four indicators adapted from Damanpour [26] and Calantone et al. [27], encompassing product, process, and

marketing innovations. MSME Performance (BP) was measured using four indicators derived from Kaplan and Norton's balanced scorecard, including sales growth, profitability, customer satisfaction, and operational efficiency. All indicators underwent rigorous reliability and validity testing during data analysis to ensure the robustness of the measurement model.

### 3.5 Data Analysis Techniques

The data were analyzed using SmartPLS 3.0 software through a two-step process comprising the evaluation of the measurement model (outer model) and the structural model (inner model). In the measurement model, convergent validity was assessed using Average Variance Extracted ( $AVE \geq 0.5$ ), discriminant validity was evaluated through the Fornell-Larcker criterion and cross-loadings, and internal consistency reliability was confirmed using Composite Reliability ( $CR \geq 0.7$ ) and Cronbach's Alpha ( $\geq 0.7$ ). The structural model evaluation included path coefficient analysis to examine the strength and significance of hypothesized relationships, bootstrapping with 5,000 samples to derive t-statistics and p-values, coefficient of determination ( $R^2$ ) to assess the model's explanatory power, effect size ( $f^2$ ) to determine the influence of each predictor, and predictive relevance ( $Q^2$ ) to evaluate the model's forecasting capability. This comprehensive analysis provided statistical evidence of the direct and indirect effects of financial literacy and entrepreneurial orientation on MSME performance through the mediating role of business innovation.

## 4. RESULTS AND DISCUSSION

### 4.1 Demographic Profile of Respondents

The demographic profile of the respondents provides a detailed overview of the background characteristics of MSME actors participating in this study, with 200 valid responses collected from owners and managers across various regions in Indonesia. In terms of gender, the distribution was relatively balanced, with 112 male respondents (56%) and 88 female respondents

(44%), indicating active participation from both genders in MSME operations. Regarding age, most respondents (42%) were in the 31–40 age range, followed by 28% aged 41–50, 20% aged 21–30, and 10% above 50, showing that the majority of MSME actors are in their productive entrepreneurial years. Educational background varied, with 48% holding a bachelor's degree, 25% diploma, 20% senior high school, and 7% postgraduate, reflecting a relatively high level of formal education among MSME owners and managers, which may support better strategic and financial decision-making.

In terms of business sectors, respondents represented diverse industries, with food and beverage being the most common (35%), followed by retail and trade (25%), services such as education and health (20%), manufacturing (15%), and others including agriculture and creative industries (5%). This trend underscores the prominence and accessibility of the culinary sector for small business ventures in Indonesia. As for business experience, 40% of respondents had operated their businesses for 3–5 years, while 30% had been in operation for 1–2 years and another 30% for more than 5 years. These figures suggest that a substantial portion of MSME actors have acquired a moderate level of business experience, which is vital for sustainable performance and growth.

### 4.2 Measurement Model Evaluation (Outer Model)

The measurement model (outer model) evaluation aims to assess the reliability and validity of the indicators used to measure each construct: Financial Literacy, Entrepreneurial Orientation, Business Innovation, and MSME Performance. This evaluation includes analysis of convergent validity, internal consistency reliability, and discriminant validity. The analysis was conducted using SmartPLS 3.0.

#### 4.2.1 Convergent Validity

Convergent validity was assessed by evaluating the outer loadings of each indicator, which are expected to exceed 0.70, and the Average Variance Extracted (AVE), which should be at least 0.50 to confirm that

the constructs adequately explain the variance of their respective indicators.

Table 1. Convergent Validity

Construct	Indicator	Outer Loading	AVE	Conclusion
Financial Literacy (FL)	FL1	0.781	0.653	Convergent validity met
	FL2	0.826		
	FL3	0.811		
	FL4	0.798		
Entrepreneurial Orientation (EO)	EO1	0.803	0.678	Convergent validity met
	EO2	0.829		
	EO3	0.792		
	EO4	0.836		
	EO5	0.801		
Business Innovation (BI)	BI1	0.784	0.645	Convergent validity met
	BI2	0.825		
	BI3	0.801		
	BI4	0.778		
MSME Performance (BP)	BP1	0.812	0.669	Convergent validity met
	BP2	0.834		
	BP3	0.795		
	BP4	0.807		

The results of the convergent validity test indicate that all item loadings exceed 0.70 and all AVE values are above 0.50, demonstrating good convergent validity across the four constructs: Financial Literacy (FL), Entrepreneurial Orientation (EO), Business Innovation (BI), and MSME Performance (BP). For Financial Literacy, the four indicators (FL1–FL4) show outer loadings ranging from 0.781 to 0.826, with an AVE of 0.653, confirming that the indicators reliably measure the construct. Similarly, Entrepreneurial Orientation exhibits strong loadings between 0.792 and 0.836 and an AVE of 0.678, indicating consistency in capturing traits such as innovativeness, risk-taking, and proactiveness. Business Innovation also meets the criteria, with loadings from 0.778 to 0.825

and an AVE of 0.645, affirming that the indicators adequately reflect the innovation construct. Lastly, MSME Performance is supported by outer loadings between 0.795 and 0.834 and an AVE of 0.669, confirming that the performance indicators are valid measures of MSME outcomes. These findings collectively support the conclusion that all constructs in the study exhibit satisfactory convergent validity.

#### 4.2.2 Internal Consistency Reliability

Internal consistency reliability is assessed using Composite Reliability (CR) and Cronbach's Alpha ( $\alpha$ ), with both measures required to have values equal to or greater than 0.70 to indicate that the indicators within each construct consistently reflect the same underlying concept.

Table 2. Reliability

Construct	Composite Reliability (CR)	Cronbach's Alpha ( $\alpha$ )	Conclusion
Financial Literacy (FL)	0.878	0.814	Reliable
Entrepreneurial Orientation (EO)	0.901	0.857	Reliable
Business Innovation (BI)	0.864	0.803	Reliable
MSME Performance (BP)	0.888	0.827	Reliable

The results indicate that all constructs in the study meet the required reliability criteria, confirming high internal consistency across Financial Literacy (FL), Entrepreneurial Orientation (EO), Business Innovation (BI), and MSME Performance (BP). Internal consistency reliability, which reflects how consistently the indicators measure their respective latent constructs, was assessed using Composite Reliability (CR) and Cronbach's Alpha ( $\alpha$ ), both of which exceeded the minimum threshold of 0.70 for all constructs. Financial Literacy showed CR of 0.878 and  $\alpha$  of 0.814, indicating reliable measurement of financial knowledge and behavior. Entrepreneurial Orientation demonstrated very high reliability with CR of 0.901 and  $\alpha$  of 0.857, confirming consistent measurement across indicators of innovativeness, risk-taking, and proactiveness. Business Innovation yielded CR of 0.864 and  $\alpha$  of 0.803, affirming strong consistency in measuring innovation-related activities such as product and process improvements. Lastly, MSME Performance had CR of 0.888 and  $\alpha$  of 0.827, validating the reliability of indicators like sales growth, profitability, and customer satisfaction. Overall, these results confirm that the constructs are measured reliably in this study.

#### 4.2.3 Discriminant Validity

Discriminant validity is assessed using the Fornell-Larcker criterion. The square root of each construct's AVE should be greater than its correlation with other constructs.

Table 3. Discriminant Validity

Construct	FL	EO	BI	BP
FL	0.808			
EO	0.526	0.823		
BI	0.601	0.638	0.803	
BP	0.548	0.574	0.681	0.818

The discriminant validity of the constructs was confirmed by comparing the diagonal values ( $\sqrt{\text{AVE}}$ ) in bold with the off-diagonal values in the corresponding rows and columns. The results show that each diagonal value is higher than any other value in the same row and column, indicating that each construct shares more variance with its own indicators than with other constructs. This confirms that discriminant validity is achieved in the model.

#### 4.3 Structural Model Evaluation (Inner Model)

The structural model (inner model) evaluation assesses the strength and significance of the relationships between constructs and the predictive accuracy of the model. In this study, the evaluation includes path coefficient analysis, coefficient of determination ( $R^2$ ), effect size ( $f^2$ ), and predictive relevance ( $Q^2$ ) using the SmartPLS 3.0 software with a bootstrapping procedure of 5,000 subsamples.

##### 4.3.1 Coefficient of Determination ( $R^2$ )

The  $R^2$  value represents the proportion of variance in the endogenous (dependent) variables that can be explained by the exogenous (independent) variables in the model. In this study, the  $R^2$  value for Business Innovation (BI) is 0.571, indicating a moderate level of explanatory power, while the  $R^2$  for MSME Performance (BP) is 0.639, suggesting moderate to substantial explanatory strength. These results show that Financial Literacy and Entrepreneurial Orientation together account for 57.1% of the variance in Business Innovation, and when combined with Business Innovation, they explain 63.9% of the variance in MSME Performance, thus demonstrating the model's good explanatory capability.

##### 4.3.2 Effect Size ( $f^2$ )

The effect size evaluates the individual contribution of each exogenous variable on the endogenous variable.

Table 4. Effect Size

Path	$f^2$ Value	Effect Size Interpretation
Financial Literacy $\rightarrow$ Business Innovation	0.196	Medium
Entrepreneurial Orientation $\rightarrow$ BI	0.243	Medium
Financial Literacy $\rightarrow$ Business Performance	0.102	Small to Medium

EO → BP	0.184	Medium
Business Innovation → BP	0.289	Medium

The effect size ( $f^2$ ) measures the contribution of each exogenous variable to the variance explained in an endogenous variable within the structural model, with Cohen's (1988) guidelines categorizing  $f^2$  values of 0.02 as small, 0.15 as medium, and 0.35 as large. The results of this study show that all predictors have small to medium effect sizes, with the strongest effect coming from Business Innovation on Business Performance. Specifically, Financial Literacy has a medium effect on Business Innovation ( $f^2 = 0.196$ ), suggesting that financially literate MSME owners are better equipped to allocate resources for innovation. Entrepreneurial Orientation demonstrates a slightly stronger medium effect on Business Innovation ( $f^2 = 0.243$ ), indicating that proactive and risk-taking entrepreneurs are more likely to innovate in response to market dynamics. In terms of direct effects on Business Performance, Financial Literacy contributes modestly with a small to medium effect size ( $f^2 = 0.102$ ), while Entrepreneurial Orientation has a medium effect ( $f^2 = 0.184$ ), highlighting its significant role in opportunity exploitation and adaptability. Notably, Business

Innovation shows the strongest impact on Business Performance ( $f^2 = 0.289$ ), confirming that innovative practices in products, processes, or marketing substantially enhance MSME growth, profitability, and customer satisfaction.

#### 4.3.3 Predictive Relevance ( $Q^2$ )

The  $Q^2$  value, obtained through the blindfolding procedure, assesses the predictive relevance of the model for each endogenous variable, where a  $Q^2$  value greater than 0 indicates predictive capability. In this study, Business Innovation (BI) has a  $Q^2$  value of 0.397 and MSME Performance (BP) has a  $Q^2$  value of 0.461, both of which reflect large predictive relevance. These results confirm that the structural model possesses strong predictive accuracy and is effective in forecasting outcomes related to business innovation and MSME performance.

#### 4.3.4 Path Coefficient and Hypothesis Testing

The path coefficients represent the strength of the relationship between variables. Hypotheses are tested using the bootstrapping method with a significance level of  $\alpha = 0.05$  (t-value > 1.96).

Table 5. Hypothesis Testing

	Path	Path Coefficient ( $\beta$ )	t-Statistic	p-Value	Result
H1	Financial Literacy → Business Performance	0.231	3.154	0.002	Supported
H2	Entrepreneurial Orientation → BP	0.278	3.894	0.000	Supported
H3	Financial Literacy → Business Innovation	0.343	4.712	0.000	Supported
H4	Entrepreneurial Orientation → BI	0.409	5.327	0.000	Supported
H5	Business Innovation → Business Performance	0.395	5.693	0.000	Supported
H6	FL → BI → BP (Indirect Effect)	0.136	3.081	0.002	Supported
H7	EO → BI → BP (Indirect Effect)	0.162	3.621	0.000	Supported

The results of hypothesis testing provide strong empirical support for the proposed conceptual framework, confirming that all seven hypotheses (H1–H7) are statistically significant at the 95% confidence level (p-value < 0.05 and t-statistic > 1.96). Both

Financial Literacy and Entrepreneurial Orientation are found to positively influence MSME Performance, both directly and indirectly through Business Innovation as a mediating variable. Specifically, Financial Literacy has a direct effect on Business



Performance ( $\beta = 0.231$ ;  $t = 3.154$ ;  $p = 0.002$ ), indicating that financially literate entrepreneurs can better manage finances and make strategic decisions. Entrepreneurial Orientation also directly enhances Business Performance ( $\beta = 0.278$ ;  $t = 3.894$ ;  $p = 0.000$ ), showing that traits like risk-taking and proactiveness are crucial for sustained growth. In terms of their effect on innovation, Financial Literacy ( $\beta = 0.343$ ;  $t = 4.712$ ;  $p = 0.000$ ) and Entrepreneurial Orientation ( $\beta = 0.409$ ;  $t = 5.327$ ;  $p = 0.000$ ) both significantly promote Business Innovation, which in turn has the strongest direct effect on Business Performance ( $\beta = 0.395$ ;  $t = 5.693$ ;  $p = 0.000$ ). Mediation analysis further supports that innovation serves as a partial mediator in the relationship between Financial Literacy and Business Performance ( $\beta = 0.136$ ;  $t = 3.081$ ;  $p = 0.002$ ), as well as between Entrepreneurial Orientation and Business Performance ( $\beta = 0.162$ ;  $t = 3.621$ ;  $p = 0.000$ ), reinforcing the central role of innovation in translating entrepreneurial and financial competencies into improved MSME outcomes.

#### 4.4 DISCUSSION

##### Financial Literacy and MSME Performance

These findings confirm that financial literacy has a direct, positive, and significant impact on MSME performance, aligning with previous studies that emphasize the critical role of financial knowledge in managing business operations effectively. MSME owners with higher levels of financial literacy are better equipped to make informed decisions, plan budgets, access external funding, and avoid financial pitfalls—ultimately enhancing profitability, sustainability, and overall business performance. Financial literacy supports effective financial decision-making and risk management, enabling entrepreneurs to identify opportunities and mitigate long-term financial risks [4]. Evidence from Gunungsari District also indicates that MSME actors with higher financial literacy demonstrate better financial behavior and management practices [28]. Moreover, financial literacy contributes to stronger budget planning and financial control, as shown in Gorontalo City, where it positively affects financial behavior and

reinforces strategic financial planning and sustainability [29] [30].

In terms of business growth, financial literacy facilitates access to external funding, allowing MSMEs to scale operations and withstand economic fluctuations. Tailored financial education programs are therefore essential to support MSME growth and resilience [5]. These efforts should involve collaboration between government institutions, financial agencies, and other key stakeholders to improve the financial capability of MSME actors and ensure the sector's long-term sustainability [4]. In addition to its direct impact, financial literacy also shows a significant indirect influence on business performance through business innovation. Financially literate entrepreneurs are more likely to allocate resources strategically toward innovation—such as developing new products, enhancing internal processes, or exploring new markets—which contributes meaningfully to improved performance and competitiveness in a dynamic business environment.

##### Entrepreneurial Orientation and MSME Performance

Entrepreneurial orientation (EO) demonstrates a strong and positive influence on MSME performance, both directly and indirectly, reinforcing the foundational views of Lumpkin & Dess [25] and [31], who assert that EO—through its dimensions of risk-taking, innovativeness, and proactiveness—acts as a strategic posture that enables firms to capitalize on opportunities and adapt to environmental shifts. EO significantly enhances business model innovation (BMI), which mediates its effect on firm performance, establishing BMI as a vital strategic growth tool for SMEs [32], particularly driven by the innovativeness and proactiveness dimensions. From the Resource-Based View (RBV), EO is recognized as a valuable, rare, and inimitable resource that contributes to sustainable competitive advantage, with autonomy and competitive aggressiveness further enabling firms to pursue new opportunities and strengthen their market position [33]. While the risk-taking aspect of EO shows mixed

empirical findings—some highlighting its strategic importance, others noting cautious behavior among entrepreneurs—it remains a core EO behavior linked to long-term success when exercised with calculation [34]. Entrepreneurs with high EO are typically more adaptive, resilient, and future-focused, inclined to take calculated risks and explore novel approaches. The significant indirect impact of EO on performance through business innovation confirms that EO fosters an innovation-driven culture within SMEs, where new ideas are embraced and operationalized to drive growth, improve performance, and enhance customer satisfaction.

### **The Role of Business Innovation as a Mediator**

Business innovation emerges as a key mediating variable in the relationship between both financial literacy and entrepreneurial orientation on MSME performance, aligning with the Resource-Based View (RBV) and Knowledge-Based View (KBV), which emphasize that internal capabilities—such as knowledge, skills, and innovation—are essential for sustaining competitive advantage. Innovation enables MSMEs to differentiate themselves in saturated markets, enhance operational efficiency, reduce costs, and deliver superior value to customers. The positive and significant path coefficient between innovation and performance confirms that MSMEs investing in innovation activities tend to outperform those relying solely on conventional practices. Marketing innovation, involving changes in product placement, promotion, pricing, and packaging, plays a vital role in building competitive advantage and reflects the RBV's focus on internal resources [35]. Additionally, technological innovation—like the adoption of emerging technologies—serves as a key enabler of sustainable growth [36], while organizational innovation, including improvements in management accounting systems and market orientation, enhances performance by strengthening innovation capabilities [37]. Empirical evidence further supports the positive correlation between innovation and

competitive advantage, showing that innovation capacity mediates the effect of internal systems on firm performance [36], [37]. A recent review also highlights that MSMEs leveraging innovation through available resources can significantly improve their growth prospects [38].

### **Theoretical Implications**

The study extends existing literature by integrating financial literacy and entrepreneurial orientation into a comprehensive model with business innovation as a mediating factor. It reinforces the RBV and KBV frameworks by demonstrating that internal capabilities (such as financial knowledge and entrepreneurial mindset) must be transformed into dynamic capabilities (such as innovation) to create measurable impacts on performance.

### **Practical Implications**

The findings of this study carry important implications for policymakers, MSME development agencies, and business educators in Indonesia. Financial training programs should be expanded and customized to address the specific needs of MSMEs, enhancing their ability to make sound financial decisions. Entrepreneurship development initiatives must go beyond traditional business planning to foster proactive and innovative mindsets among business owners. Additionally, innovation support schemes—such as grants, business incubators, and digital technology adoption programs—should be made more accessible, particularly for MSMEs in their early stages of growth. Ultimately, integrated capacity-building programs that combine financial education, entrepreneurial coaching, and innovation facilitation are likely to deliver the greatest impact in improving MSME performance and long-term sustainability.

## **5. CONCLUSION**

This study confirms that financial literacy and entrepreneurial orientation are essential capabilities that positively influence the performance of MSMEs in Indonesia. Moreover, business innovation plays a significant mediating role, amplifying the

impact of these two variables on business outcomes. Entrepreneurs who possess strong financial knowledge and exhibit proactive, innovative, and risk-taking behavior are more inclined to implement novel practices that enhance competitiveness, boost customer satisfaction, and drive business growth. These findings not only validate the importance of internal competencies but also emphasize how innovation acts as a bridge between entrepreneurial and financial capabilities and improved firm performance.

The empirical results reinforce the theoretical foundations of the Resource-Based View (RBV) and Knowledge-Based View (KBV), which regard internal capabilities and innovation as strategic assets crucial for

sustainable competitive advantage. Practically, the findings underline the importance of integrated MSME development strategies that concurrently foster financial literacy, entrepreneurial mindset, and innovation adoption. Policymakers, educators, and support institutions should prioritize the provision of tools, training, and enabling environments to cultivate these capacities among MSME actors. For future research, expanding the model to include external variables such as digital transformation, market dynamics, and government interventions could offer a more comprehensive understanding of the critical success factors influencing MSMEs in emerging economies.

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