

Inclusive banking financing, financial literacy, and social innovation: strategies for MSME resilience and performance

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Abstract

This study analyzes how inclusive banking finance, financial literacy, and social innovation are transformed into MSME performance through business resilience in Baubau City. The study employs a sequential explanatory mixed-methods design. Quantitative data were obtained from 150 MSME owners and analyzed using PLS-SEM with SmartPLS 4, followed by a thematic analysis of in-depth interviews with six key informants to explain the patterns found in the quantitative results. Inclusive banking finance, financial literacy, and social innovation have a positive and significant impact on MSME resilience. Inclusive banking finance also has a direct and significant impact on performance, whereas the direct effects of financial literacy and social innovation on performance are not significant. MSME resilience has a positive and significant impact on performance and mediates all antecedent relationships partially for inclusive banking finance and fully for financial literacy and social innovation. The model explains 85.8% of the variance in resilience and 86.4% of the variance in performance. Qualitative findings indicate that financing strengthens liquidity and operational continuity, financial literacy improves cash flow discipline and risk preparedness, and innovation enhances adaptive capacity. Thus, MSME resilience is positioned as a conversion mechanism that transforms financial resources and innovation capabilities into more sustainable MSME performance.

Keywords: *Inclusive bank financing, financial literacy, social innovation, MSME resilience, MSME performance.*

Introduction

Micro, small, and medium-sized enterprises (MSMEs) constitute a key pillar of the Indonesian economy due to their significant contributions to gross domestic product (GDP), employment creation, and the strengthening of the national economic structure. Anatan, (2023) explains that, in 2022, MSMEs in Indonesia contributed approximately 61.1% to the national GDP and accounted for around 97% of domestic employment. These findings reinforce the strategic position of MSMEs in supporting economic growth, income distribution, and community economic resilience. In the regional context, Widita and Widyastuti, (2024) also emphasizes that MSMEs play an important role in the economy and the livelihoods of communities, particularly in developing countries such as Indonesia, where MSMEs account for more than 95% of business enterprises. Therefore, in Baubau City, Southeast Sulawesi Province, MSMEs can be positioned as the main drivers of the local economy, particularly in terms of employment creation, increasing household income, and

strengthening regional economic resilience.

Despite their significant contribution to the local economy, MSMEs in Baubau City continue to face structural challenges, particularly limited access to formal financing. In Indonesia, access to credit remains critical for strengthening MSMEs' capital, production capacity, and business performance (Ismanto et al., 2024). However, limited information on banking products, procedures, and financing requirements may constrain MSMEs' ability to access appropriate financial services. This issue is reflected in regional disparities in MSME credit distribution reported by Bank Indonesia. Empirical evidence further shows that access to formal credit significantly improves MSME performance (Widyastuti et al., 2023), while banking stability and capacity influence MSMEs' access to credit (Ismanto et al., 2024). These conditions highlight the importance of examining the determinants of formal financing access among MSMEs in Baubau City.

Against this background, this study conceptualizes inclusive banking financing as MSMEs' access to and effective use of formal bank financing that is accessible, affordable, adequate, appropriate to business needs, and sustainable. Unlike financial inclusion in general, this construct focuses specifically on bank-based financing and the conditions that enable MSMEs to obtain and use financing effectively. Its dimensions include accessibility, affordability, adequacy, sustainability, and understanding of financing products. The KUR program represents an important policy mechanism for expanding MSMEs' access to credit, although its utilization remains influenced by borrower prospects, banking capacity and policies, available resources, and macroeconomic conditions (Aristanto et al., 2022). Accordingly, financial literacy is also important in enabling MSMEs to understand financing products, meet requirements, and manage financing effectively (Hussain et al., 2018; Kurniasari et al., 2025).

Social innovation in this study refers to firm-level innovations through which MSMEs respond to unmet market and stakeholder needs by introducing or improving products, business processes, business models, and the adaptive use of digital technologies. It is distinguished from fintech adoption, digital wallets, or cashless payments per se, as digital technologies are considered social innovation only when they support broader changes in value creation and delivery. Accordingly, the construct is measured through product innovation, process innovation, business model innovation, and adaptive digital technology use. This conceptualization recognizes that digitalization may facilitate financial access and reduce transaction barriers (Thathsarani & Jianguo, 2022; Rahayu et al., 2023; Zhang et al., 2023), while the present study focuses on innovation as an adaptive capability of MSMEs.

Previous studies have established significant relationships between financial inclusion, financial literacy, financing access, digital capabilities, and MSME outcomes (Ratnawati, 2020; Al-Shami et al., 2024; Kurniasari et al., 2025; Rahayu et al., 2023). However, much of this literature emphasizes direct effects and provides limited explanation of how these resources and capabilities are translated into sustained performance. Resilience may provide this missing mechanism, as MSMEs must be able to absorb shocks, maintain operations, and adapt to changing conditions before available resources generate sustainable performance (Liu et al., 2024). Therefore, this study examines MSME resilience as an intervening mechanism linking inclusive banking financing, financial literacy, and social innovation to business performance.

This mechanism is particularly relevant in Baubau City, where MSMEs operate amid

constraints in financing access, infrastructure, connectivity, and institutional support. Limited financial literacy may weaken financial decision-making, while restricted financing can constrain liquidity and business expansion. Similarly, innovation may require substantial adjustment costs and does not necessarily translate immediately into improved performance. Under such conditions, resilience enables MSMEs to maintain operations, manage liquidity, adapt to market changes, and sustain business activities, thereby facilitating the conversion of financial and organizational resources into performance outcomes.

The novelty of this study lies in its mechanism-based perspective rather than merely combining established variables or examining a new geographical setting. It proposes that inclusive banking financing provides financial resources, financial literacy enhances their effective utilization, and social innovation strengthens MSMEs' adaptive capacity, with these resources and capabilities contributing to performance through greater resilience. By distinguishing direct from mediated effects, the study provides a more nuanced explanation of how and under what conditions these antecedents translate into MSME performance. This mechanism-oriented perspective constitutes the study's main theoretical contribution.

This study draws on the Resource-Based View (RBV) and Dynamic Capabilities Theory to explain how MSMEs utilize resources and capabilities to strengthen resilience and performance. RBV argues that firm outcomes depend on the ability to effectively utilize valuable resources and capabilities (Barney, 1991). In this study, inclusive banking financing represents a financial resource, financial literacy a human-capital capability, and social innovation an adaptive organizational capability. These resources and capabilities are expected to support both MSME resilience and performance.

Dynamic Capabilities Theory complements RBV by emphasizing firms' ability to integrate, adapt, and reconfigure resources in response to environmental changes (Teece et al., 1997). In this context, MSME resilience represents an adaptive capacity that enables firms to maintain operations and respond to financial, market, and environmental disruptions. Accordingly, the model proposes that inclusive banking financing, financial literacy, and social innovation strengthen resilience and performance, while resilience serves as a conversion mechanism through which these resources and capabilities contribute to sustained MSME performance.

Inclusive banking financing provides MSMEs with access to formal financial resources that can strengthen liquidity, working capital, and business continuity. In Indonesia, financing schemes such as the People's Business Credit (KUR) provide working capital and investment financing for productive MSMEs, although access and utilization may still be influenced by borrower conditions, banking policies, service capacity, and broader economic conditions. Thus, the contribution of financing to resilience depends not merely on credit availability but also on whether financing is accessible, adequate, and appropriate to MSMEs' operational needs. Empirical evidence supports the relevance of financial inclusion to business resilience. Salma et al. (2024) found that financial inclusion significantly influences the resilience of micro-enterprises, particularly by facilitating access to financial institutions and business capital during crisis conditions. Financial inclusion has also been shown to improve MSME performance through financial intermediation and access to capital (Ratnawati, 2020). Therefore, access to appropriate formal financing can provide MSMEs with the financial flexibility required to manage temporary financial

pressures, maintain operations, and respond to unexpected disruptions. Accordingly, inclusive banking financing is expected to strengthen MSME resilience.

H1: Inclusive banking financing has a positive and significant effect on MSME resilience.

Financial literacy enables MSME owners to understand financing requirements, evaluate financial products, manage cash flows, assess financial risks, and make informed financial decisions. These capabilities are particularly important when MSMEs face financial uncertainty because the availability of financing alone does not ensure that funds will be used effectively. Financially literate owners are better positioned to select appropriate financing, manage repayment obligations, maintain liquidity, and anticipate financial risks. Empirical evidence provides direct support for this relationship. Korompis et al. (2023) found that financial literacy has a positive and significant effect on the financial resilience of MSMEs in Manado. Similarly, Salma et al. (2024) found that financial literacy significantly contributes to the resilience of micro-enterprises during the COVID-19 crisis. These findings indicate that financial knowledge is not only relevant to financial access and business decisions but also to the ability of MSMEs to manage financial pressures and sustain operations during disruption. Therefore, higher financial literacy is expected to strengthen MSME resilience.

H2: Financial literacy has a positive and significant effect on MSME resilience.

Social innovation enables MSMEs to adapt products, processes, business models, and digital practices in response to changing customer and stakeholder needs. Such adaptation can provide alternative ways to create value, reach customers, improve operational efficiency, and maintain business activities when market conditions change. In this context, social innovation is not limited to the adoption of digital financial technologies but reflects broader adaptive changes in how MSMEs organize their activities and respond to emerging challenges. Empirical evidence indicates that social innovation contributes to the sustainability of MSMEs. Iskandar et al. (2024), based on 376 Indonesian MSMEs, found that social innovation has a significant effect on business sustainability. This finding suggests that innovation can strengthen MSMEs' ability to respond to changing environments and sustain their business activities. For MSMEs operating in regional contexts such as Baubau City, where infrastructure, connectivity, and market access may constrain business adaptation, the ability to innovate may become particularly important for maintaining continuity under uncertainty. Accordingly, stronger social innovation is expected to enhance MSME resilience.

H3: Social innovation has a positive and significant effect on MSME resilience.

Inclusive banking financing can directly improve MSME performance by reducing capital constraints and providing resources for working capital, investment, production, and business expansion. Appropriate formal financing enables MSMEs to strengthen their capital base, maintain liquidity, increase production capacity, and respond to market opportunities. However, these benefits depend on the ability of MSMEs to access financing that is appropriate to their business requirements. Empirical evidence supports this relationship. Ratnawati (2020) found that financial inclusion significantly improves MSME performance through financial intermediation and access to capital. In addition, Widyastuti

et al. (2023) found that formal credit access significantly affects MSME performance. Thus, access to appropriate formal banking financing can provide the resources required to strengthen productive activities and improve business outcomes. Therefore, MSMEs with greater access to inclusive banking financing are expected to achieve better performance.

H4: Inclusive banking financing has a positive and significant effect on MSME performance.

Financial literacy can improve MSME performance by strengthening financial planning, cash-flow management, financing decisions, investment evaluation, and financial risk management. It also enables business owners to overcome information asymmetry and better understand the costs and requirements associated with formal financing. Consequently, financial literacy can improve the efficiency with which MSMEs allocate and utilize financial resources. Empirical evidence confirms the relevance of financial literacy to MSME outcomes. Widyastuti et al. (2023) found that financial literacy significantly affects formal credit access and MSME performance. Kurniasari et al. (2025) similarly examined financial literacy, financial technology adoption, and access to finance in relation to SME business performance and sustainability. These findings suggest that financial knowledge supports better financial decisions and more effective utilization of available resources. Accordingly, higher financial literacy is expected to improve MSME performance.

H5: Financial literacy has a positive and significant effect on MSME performance.

Social innovation can improve MSME performance by enabling firms to modify products, processes, business models, and digital practices in response to changing market conditions. These adaptations can increase customer value, operational efficiency, market responsiveness, and competitiveness. Importantly, innovation allows MSMEs to respond to changes not only through new products but also through new ways of organizing and delivering value. Evidence from Indonesian MSMEs supports the importance of social innovation for business outcomes. Iskandar et al. (2024) found that social innovation significantly affects MSME business sustainability. This suggests that the capacity to innovate can help MSMEs respond to environmental changes and sustain their business activities. Therefore, MSMEs that are more capable of implementing adaptive social innovations are expected to achieve stronger business performance.

H6: Social innovation has a positive and significant effect on MSME performance.

MSME resilience reflects the ability of firms to withstand disruptions, maintain operational continuity, adapt to changing conditions, and continue creating value. Resilient MSMEs are better positioned to manage financial and operational pressures, retain customers, adjust business activities, and respond to changes in the external environment. These capabilities can reduce the negative effects of disruption and support more stable business outcomes. Recent evidence also supports the relationship between resilience and MSME outcomes. Mawardi et al. (2025) examine resilient MSMEs in the digital era and emphasize the role of resilience in managing environmental uncertainty through organizational capabilities. Combined with evidence linking financial inclusion and financial literacy to enterprise resilience (Salma et al., 2024; Korompis et al. 2023), these findings suggest that resilience represents an important capacity for sustaining business activities under uncertain conditions. Accordingly, MSMEs with stronger resilience are expected to

achieve better performance.

H7: MSME resilience has a positive and significant effect on MSME performance.

The preceding arguments indicate that inclusive banking financing, financial literacy, and social innovation may influence MSME performance not only directly but also through the development of resilience. Financing provides the financial capacity needed to maintain liquidity and operations during disruptions, while financial literacy enables MSMEs to select and manage financial resources effectively. Social innovation, meanwhile, strengthens the ability of MSMEs to modify products, processes, business models, and market responses when environmental conditions change. These factors therefore provide resources and capabilities that can strengthen MSMEs' ability to withstand and adapt to disruption. Empirical studies provide evidence for the individual links underlying this mechanism. Financial inclusion and financial literacy have been found to influence micro-enterprise resilience (Salma et al., 2024), while financial literacy has also been shown to significantly improve MSMEs' financial resilience (Korompis et al., 2023). Social innovation has been associated with MSME business sustainability Iskandar et al., (2024), indicating its potential role in strengthening firms' adaptive capacity. At the same time, resilience provides an important basis for maintaining business activities under environmental uncertainty (Mawardi et al., 2025). However, these relationships have generally been examined separately rather than within an integrated model that positions MSME resilience as the mechanism linking inclusive banking financing, financial literacy, and social innovation to performance. Accordingly, this study proposes that MSME resilience functions as an intervening mechanism through which financial resources and organizational capabilities are converted into business performance. This perspective moves beyond the conventional examination of direct effects by explaining how and through what mechanism financing, financial knowledge, and innovation contribute to MSME performance.

H8: MSME resilience positively and significantly mediates the effect of inclusive banking financing on MSME performance.

H9: MSME resilience positively and significantly mediates the effect of financial literacy on MSME performance.

H10: MSME resilience positively and significantly mediates the effect of social innovation on MSME performance.

This study is important because MSMEs in Baubau City play a strategic role in supporting the local economy but continue to face various structural constraints related to access to financing, financial literacy capacity, and the ability to adapt to social innovation. Low financial literacy not only limits MSME owners' ability to access formal financing but also affects the quality of financial decision-making, cash flow management, and business planning. On the other hand, the development of technology-based social innovation creates new opportunities for MSMEs to improve efficiency, expand market access, and obtain financial services more easily. However, these benefits have not yet been experienced equally by MSMEs in regions that continue to face limitations in digital infrastructure, technological adaptability, and institutional support.

Based on these gaps, the novelty of this study lies in developing an integrative model that links inclusive bank financing, financial literacy, and social innovation as independent

variables to MSME resilience and MSME performance. This study also examines the mediating role of MSME resilience in the relationships between inclusive bank financing, financial literacy, and social innovation and MSME performance. Thus, this study not only explains the direct effects among the variables but also demonstrates the indirect mechanisms indicating that improvements in MSME performance need to be preceded by strengthened business resilience. This approach is expected to provide a theoretical contribution to the development of inclusive financing models and an empirical contribution to the formulation of more context-specific policies for strengthening MSMEs, particularly in Baubau City as part of Eastern Indonesia.

Methods

This study employs a mixed-methods approach with a sequential explanatory design, involving a quantitative phase followed by a qualitative phase to explain and elaborate on the quantitative findings (Creswell and Plano Clark, 2018; Sudarnice et al. 2025). The quantitative phase aims to examine the influences among inclusive bank financing, financial literacy, social innovation, MSME resilience, and MSME performance, including both significant and non-significant relationships. The study population consists of approximately 2,000 active MSMEs in Baubau City. A total of 150 respondents were selected using purposive sampling based on the following criteria: MSME owners or managers who have operated for at least one year, are at least 18 years old, are located in Baubau City, and have accessed or applied for bank financing (including rejected applications) (Campbell et al., 2020). The sample size was determined based on PLS-SEM analysis requirements, considering model complexity, the number of latent constructs, and recommended sample sizes for PLS-SEM by (Hair et al., 2021). Although this sample represents approximately 7.5% of the population, it is not intended to be statistically representative given the use of purposive sampling but was instead selected based on its alignment with the research objectives. Quantitative data were collected via questionnaires and analyzed using PLS-SEM with SmartPLS 4, involving the evaluation of both measurement and structural models by (Hair et al., 2019; Sarstedt et al., 2020; and Ringle et al., 2024).

Following the quantitative analysis, a qualitative phase was conducted to explain the research findings. Six key informants were purposively selected based on their experience and involvement in the MSME ecosystem. These qualitative informants were distinct from the 150 survey respondents and were not included in the PLS-SEM analysis. Selecting different informants aimed to capture broader perspectives on the contextual factors explaining the quantitative results. The informants included MSME owners, bank managers of the KUR (People's Business Credit) program, and local government officials responsible for MSME development. Data were collected through semi-structured interviews and analyzed using thematic analysis. The qualitative results were then integrated with the quantitative findings to explain both significant and non-significant relationships and to deepen the understanding of the role of MSME resilience in influencing MSME performance. The qualitative phase served to explain and enrich the interpretation of the quantitative results, rather than to re-test the hypotheses. Hypothesis and mediation testing was conducted using the bootstrapping procedure by examining the path coefficients, t-statistics, and p-values (Sarstedt et al., 2020). The structural model tested in this study is presented in Figure 1. The model illustrates the direct and indirect relationships among

Inclusive Banking Financing, Financial Literacy, Social Innovation, MSME Resilience, and MSME Performance.

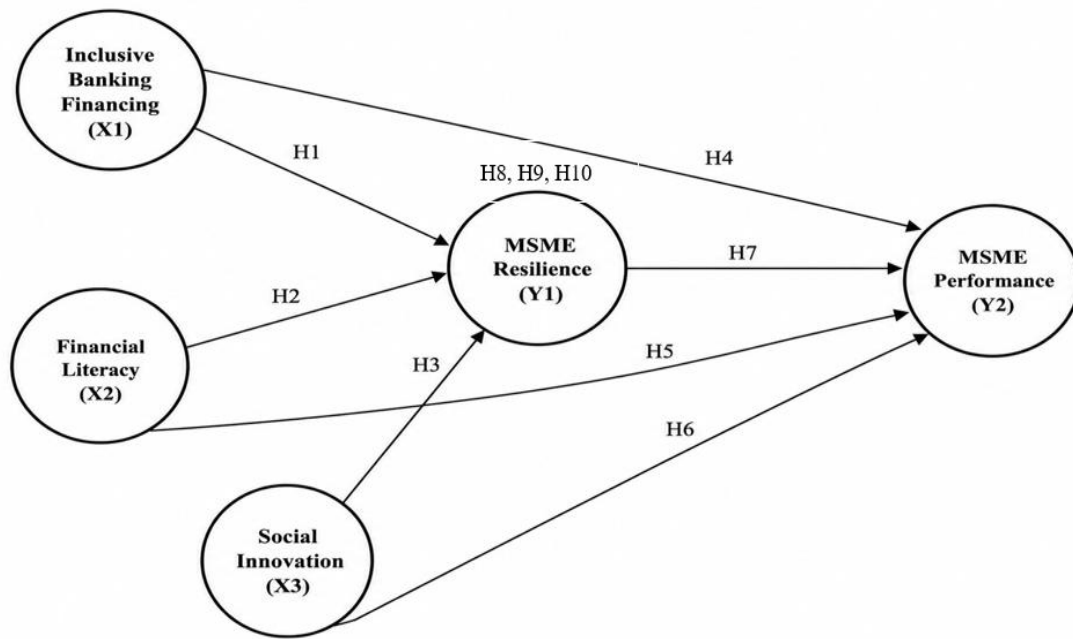


Figure 1. Structural Research Model

$$Y_1 = \beta_0 + \beta_1 X_{IBF} + \beta_2 X_{FL} + \beta_3 X_{SI} + \varepsilon_1 \quad (1)$$

$$Y_2 = \beta_0 + \beta_1 X_{IBF} + \beta_2 X_{FL} + \beta_3 X_{SI} + \beta_7 X_{SR} + \varepsilon_2 \quad (2)$$

Y_1 is the resilience of MSMEs, Y_2 is the performance of MSMEs, X_1 is inclusive banking financing, X_2 is financial literacy, X_3 is a social innovation, β_0 is a constant, β_1 to β_7 is the path coefficient, and ε is error term. Mediation analysis was conducted to examine the indirect effects of inclusive bank financing, financial literacy, and social innovation on MSME performance through MSME resilience. The indirect-effect equations were formulated as follows:

$$IE_1 = \beta_1 \times \beta_7 \quad (3)$$

$$IE_2 = \beta_2 \times \beta_7 \quad (4)$$

$$IE_3 = \beta_3 \times \beta_7 \quad (5)$$

Result and Discussions

This study involved 150 micro, small, and medium-sized enterprise (MSME) owners in Baubau City who met the respondent eligibility criteria: they had operated their businesses for at least one year, were at least 18 years old, had previously accessed or applied for bank financing, and resided and conducted their business activities within Baubau City. The respondents represented various business sectors, including trade, services, manufacturing, and culinary businesses. This sectoral diversity indicates that the research sample adequately represents the characteristics of MSMEs in Baubau City as the object of this study.

Table 1. Research Respondents

Category	Sub-Category	Number of Respondents	(%)
Gender	Male	62	41.33
	Female	88	58.67
Age	18–25 year	21	14.00
	26–35 year	46	30.67
	36–45 year	49	32.67
	>45 year	34	22.66
Educational Level	Junior High School or Equivalent	18	12.00
	Senior High School/Vocational High School or Equivalent	74	49.33
	Diploma Degree	21	14.00
	Bachelor's Degree	35	23.34
	Postgraduate Degree	2	1.33
Type of Business	Trade	48	32.00
	Culinary Business	42	28.00
	Services	33	22.00
	Manufacturing Industry	27	18.00
Years in Business	1–3 Years	39	26.00
	4–6 Years	51	34.00
	7–10 Years	37	24.67
	>10 Years	23	15.33
Experience with Bank Financing	Previously Accessed Bank Financing	96	64.00
	Previously Applied but Was Rejected	32	21.33
	Has Never Received Financing but Is Aware of Financing Programs	22	14.67

Based on the table 2, nearly all indicators have outer loading values above 0.70. The only exception is FL1 (Financial Literacy), with a loading of 0.652. Although this value is below the ideal threshold, the indicator was retained because: (1) its loading remains above the absolute minimum threshold of 0.50; (2) the overall average variance extracted (AVE) value of the Financial Literacy construct still meets the required threshold of ≥ 0.50 ; and (3) its removal would not significantly increase the AVE value (Hair et al., 2019). The highest outer loading values were recorded for SI3 (0.902), FL4 (0.900), P-SMEs4 (0.890), and P-SMEs1 (0.889). These findings indicate that all indicators adequately represent their respective constructs, consistent with the principles of convergent validity in PLS-SEM (Hair et al., 2019; Sarstedt & Hair, 2021; Ringle et al., 2023). All constructs meet the reliability and convergent validity criteria for the PLS-SEM measurement model. Cronbach's alpha ranges from 0.821 to 0.895, composite reliability from 0.881 to 0.927, and AVE from 0.653 to 0.760, exceeding the recommended thresholds of 0.70 for reliability and 0.50 for AVE (Hair et al., 2019; Hair et al., 2021). Thus, all constructs demonstrate adequate internal consistency and convergent validity.

Table 2. Outer Loading Test Results

Questionnaire Item Statement	Construct/Variable	Outer Loading
My business has access to banking financing services to support business activities (IBF1)	Inclusive Banking Financing (X1)	0.846
Banking financing services are easily accessible for my business (IBF2)	Inclusive Banking Financing (X1)	0.811
The procedures and requirements for obtaining banking financing are understandable for my business (IBF3)	Inclusive Banking Financing (X1)	0.816
Banking financing contributes to improving the development and sustainability of my business (IBF4)	Inclusive Banking Financing (X1)	0.852
I understand basic financial concepts related to managing my business (FL1)	Financial Literacy (X2)	0.652
I am able to manage business finances effectively (FL2)	Financial Literacy (X2)	0.801
I understand the importance of financial planning for business sustainability (FL3)	Financial Literacy (X2)	0.857
I am able to make appropriate financial decisions for my business (FL4)	Financial Literacy (X2)	0.900
My business implements new ideas to improve products or services (SI1)	Social Innovation (X3)	0.840
My business develops innovations that provide benefits to customers and society (SI2)	Social Innovation (X3)	0.870
My business creates innovative solutions to address business and social challenges (SI3)	Social Innovation (X3)	0.902
My business continuously improves its activities through innovative approaches (SI4)	Social Innovation (X3)	0.834
My business is able to adapt to changes in the business environment (R-SMEs1)	MSME Resilience (Y1)	0.796
My business is able to recover from business difficulties and disruptions (R-SMEs2)	MSME Resilience (Y1)	0.817
My business has strategies to maintain operational continuity during challenging conditions (R-SMEs3)	MSME Resilience (Y1)	0.851
My business is capable of responding effectively to unexpected changes (R-SMEs4)	MSME Resilience (Y1)	0.859
My business has experienced improvement in sales performance (P-SMEs1)	MSME Performance (Y2)	0.889
My business has achieved better profitability over time (P-SMEs2)	MSME Performance (Y2)	0.840
My business has improved its competitiveness in the market (P-SMEs3)	MSME Performance (Y2)	0.868
Overall, my business performance has improved compared with previous periods (P-SMEs4)	MSME Performance (Y2)	0.890

Table 3. Construct Reliability and Validity

Construct/Variable	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Inclusive Banking Financing (X1)	0.851	0.858	0.899	0.691
Financial Literacy (X2)	0.821	0.857	0.881	0.653
Social Innovation (X3)	0.884	0.886	0.920	0.743
MSME Resilience (Y1)	0.850	0.851	0.899	0.690
MSME Performance (Y2)	0.895	0.900	0.927	0.760

The R-Square values of both endogenous constructs indicate a very high predictive power of the model. MSME resilience (Y1) obtained an $R^2 = 0.858$, which means that 85.8% of the variation in MSME resilience can be explained by Inclusive Banking Financing, Financial Literacy, and Social Innovation. Meanwhile, MSME performance (Y2) obtained an $R^2 = 0.864$, meaning that 86.4% of the variation in MSME performance is explained by all variables in the model, including MSME resilience as an intervening variable.

Table 4. R-Square Value

Endogenous Variables	R Square	R Square Adjusted
MSME Resilience (Y1)	0.858	0.855
MSME Performance (Y2)	0.864	0.861

Table 5. Fornell-Larcker Criterion

Construct	FL	IBF	P-SMEs	R-SMEs	SI
Financial Literacy	0.808				
Inclusive Banking Financing	0.831	0.831			
SMEs Performance	0.873	0.862	0.872		
SMEs Resilience	0.895	0.839	0.908	0.831	
Social Innovation	0.902	0.830	0.850	0.899	0.862

Based on the table above, the square root of the AVE for each construct is 0.808 for Financial Literacy, 0.831 for Inclusive Bank Financing, 0.872 for MSME Performance, 0.831 for MSME Resilience, and 0.862 for Social Innovation. These diagonal values are used to assess discriminant validity based on the Fornell-Larcker criterion, which requires the square root of the AVE to be greater than the correlations between constructs (Fornell & Larcker, 1981). Although several pairs of constructs exhibit high correlations, particularly Social Innovation and Financial Literacy at 0.902 and MSME Resilience and MSME Performance at 0.908, discriminant validity should be further confirmed using the HTMT criterion because the Fornell-Larcker criterion is often considered less sensitive in detecting discriminant validity issues. HTMT values below 0.90 generally indicate that discriminant validity remains acceptable (Henseler et al 2021), (Hair, 2019). Thus, overall, the discriminant validity of the research model is established.

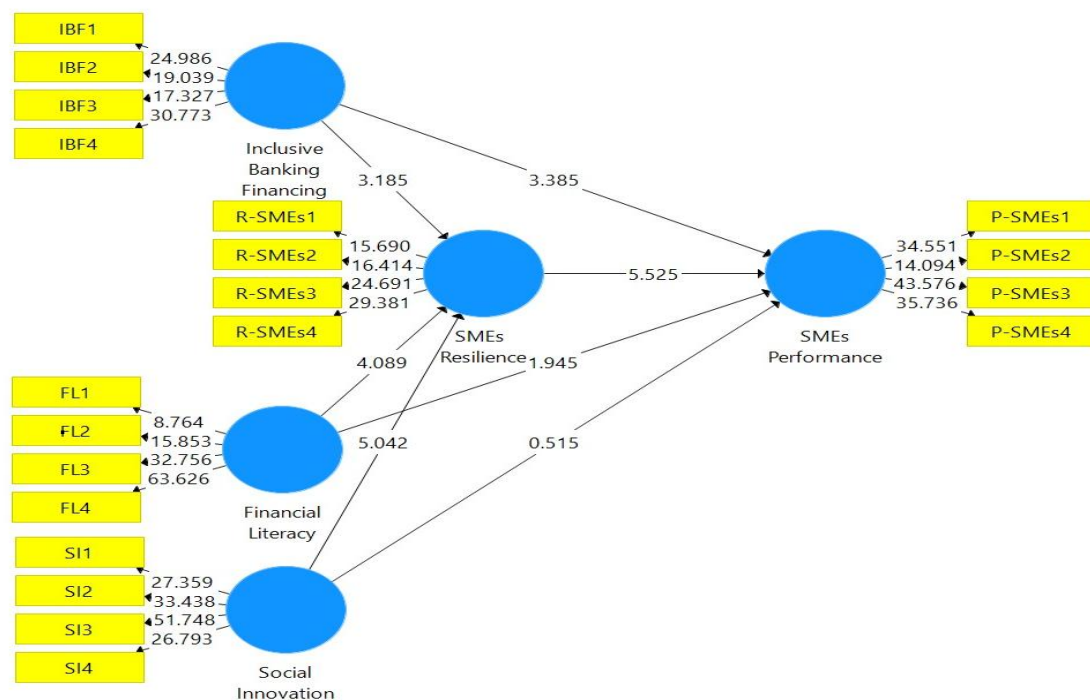


Figure 2. Hypothesis Testing

Based on Figure 2, the bootstrapping results present the T-statistic values for each inter-variable influence within the research model. The findings indicate that Inclusive Bank Financing has a significant effect on MSME Resilience, with a T-statistic of 3.185 (> 1.96) and a p-value of 0.002 (< 0.05) (H1 accepted). Inclusive Bank Financing also significantly affects MSME Performance, with a T-statistic of 3.385 (> 1.96) and a p-value of 0.001 (< 0.05) (H4 accepted). Furthermore, financial literacy has a significant influence on MSME resilience, with a T-statistic of 4.089 (> 1.96) and a p-value of 0.001 (< 0.05) (H2 accepted). However, the influence of financial literacy on MSME performance yielded a T-statistic of 1.94 slightly below the 1.96 threshold and a p-value of 0.052 (> 0.05). Consequently, the direct influence of financial literacy on MSME performance cannot be considered significant at the 5% level (H5 rejected). Regarding social innovation, the results indicate a significant influence on MSME resilience, with a T-statistic of 5.042 (> 1.96) and a p-value of 0.001 (< 0.05) (H3 accepted). Conversely, the direct influence of social innovation on MSME performance was found to be insignificant, as the T-statistic was only 0.515 (< 1.96) and the p-value was 0.607 (> 0.05) (H6 rejected). Meanwhile, MSME resilience significantly influences MSME performance, with a T-statistic of 5.525 (> 1.96) and a p-value of 0.001 (< 0.05) (H7 accepted). These findings indicate that MSME resilience is a crucial variable in enhancing MSME performance.

The mediation analysis results clarify the mechanisms predicted by the theoretical model. MSME resilience significantly mediates the impact of the three antecedents on performance. MSME resilience significantly mediates the effect of inclusive banking financing on MSME performance in Baubau City (t-statistic = 3.164 > 1.96 ; $p = 0.002 < 0.05$); since the direct effect of inclusive banking financing on MSME performance is significant, this pattern is classified as partial mediation. Furthermore, MSME resilience significantly mediates the effect of financial literacy on MSME performance in Baubau City ($t = 2.814 >$

1.96; $p = 0.005 < 0.05$); as the direct effect of financial literacy on MSME performance is not significant, this instance is categorized as indirect-only (full) mediation. Finally, MSME resilience significantly mediates the effect of social innovation on MSME performance in Baubau City ($t = 4.032 > 1.96$; $p = 0.001 < 0.05$); since the direct effect of social innovation on MSME performance is also not significant, this mediation is categorized as indirect-only (full) mediation.

Table 6. Hypothesis Results for Direct Effects

Direct	β	SE	t	p
Financial Literacy → Performance	0.205	0.105	1.945	0.052
Financial Literacy → Resilience	0.363	0.089	4.089	0.001
Inclusive Bank Financing → Performance	0.294	0.087	3.385	0.001
Inclusive Bank Financing → Resilience	0.202	0.063	3.185	0.002
Resilience → Performance	0.519	0.094	5.525	0.001
Social Innovation → Performance	0.045	0.088	0.515	0.607
Social Innovation → Resilience	0.404	0.080	5.042	0.001

Table 7. Hypothesis Results for Indirect Effects

Indirect Route	β	t	p	Direct Influence	Mediation
IBF → Resilience → Performance	0.105	3.164	0.002	Significant	Partial
Financial Literacy → Resilience → Performance	0.188	2.814	0.005	Not significant	Full
Social Innovation → Resilience → Performance	0.209	4.032	<0.001	Not significant	Full

The analysis of Hypothesis 1 shows that inclusive banking financing has a positive and significant effect on MSME resilience (T-statistic = 3.185), thus H1 is accepted. Accessible, affordable, and appropriate financing enables MSMEs to maintain working capital, operational continuity, and overcome financial pressures. These findings support the Resource-Based View (RBV), which emphasizes resources as a foundation for value creation, and the Dynamic Capabilities Theory (DCT), which highlights the importance of adapting and utilizing resources in response to environmental changes (Barney, 1991; Teece et al., 1997). This finding is consistent with Salma et al. (2024) and Ratnawati (2020), who found that financial inclusion strengthens MSME resilience and performance through improved access to capital and financial services. The analysis of Hypothesis 2 indicates that financial literacy has a positive and significant effect on MSME resilience (T-statistic = 4.089), therefore H2 is accepted. Financial literacy enables MSME owners to conduct better financial planning, cash flow management, risk assessment, and financing decisions. As a knowledge-based resource, financial literacy strengthens financial management capabilities and supports adaptive decision-making during uncertainty (Barney, 1991; Teece et al., 1997). These findings are supported by Korompis et al. (2023) and Salma et al. (2024), who demonstrated that financial literacy contributes to MSME resilience, particularly during financial crises.

Hypothesis 3 confirms that social innovation strengthens MSME resilience. The ability to adjust products, business processes, customer relationships, and technology utilization enables MSMEs to respond to market changes. Social innovation represents a capability that

supports value creation and adaptation, consistent with RBV and DCT perspectives (Barney, 1991; Teece et al., 1997). This result aligns with Iskandar et al. (2024), who found that social innovation contributes to MSME sustainability through innovation, collaboration, and resource utilization. Hypothesis 4 demonstrates that inclusive banking financing has a positive and significant effect on MSME performance (T-statistic = 3.385), thus H4 is accepted. Formal financing provides additional capacity for production activities, working capital management, business expansion, and market opportunity utilization. This finding supports RBV, which views financial resources as drivers of economic value, and DCT, which explains how financial flexibility supports business adaptation (Barney, 1991; Teece et al., 1997). The findings are consistent with Ratnawati (2020) and Widyastuti et al. (2023), who found that access to formal financing improves MSME performance. Hypothesis 5 indicates that financial literacy does not have a significant direct effect on MSME performance (T-statistic = 1.945), therefore H5 is not supported. This finding suggests that financial knowledge alone does not automatically increase sales, productivity, or profitability unless it is translated into effective management practices. From the RBV and DCT perspectives, knowledge becomes valuable only when applied through managerial actions and adaptive capabilities (Barney, 1991; Teece et al., 1997). This finding is supported by Barokah et al. (2024) and Puspita et al. (2024), who reported that financial literacy requires supporting mechanisms to generate measurable business outcomes.

Hypothesis 6 shows that social innovation does not have a significant direct effect on MSME performance, therefore H6 is not supported. Although innovation improves adaptability, its economic benefits may require time, investment, and effective implementation. Innovation capabilities generate value when they are properly integrated into business processes and supported by adaptive capabilities (Barney, 1991; Teece et al., 1997). This finding is consistent with Álvarez-García et al. (2022), who found that social innovation may influence performance indirectly through other mechanisms. Hypothesis 7 confirms that MSME resilience has a positive and significant effect on MSME performance (path coefficient = 0.519), therefore H7 is accepted. Resilient MSMEs are better able to maintain operations, manage financial pressures, adapt strategies, and respond to market changes. This finding supports DCT, which emphasizes the role of adaptive capabilities in sustaining competitive performance (Teece et al., 1997). The result is consistent with Mawardi et al. (2025), who found that resilience and digital transformation enhance MSME performance under uncertain conditions. The mediation test of Hypothesis 8 shows that MSME resilience mediates the relationship between inclusive banking financing and performance. Financing does not automatically improve performance but first strengthens MSMEs' ability to survive and adapt. This finding extends Ratnawati (2020) and Salma et al. (2024), demonstrating that financial resources generate greater benefits when transformed into business resilience.

Hypothesis 9 demonstrates that MSME resilience mediates the relationship between financial literacy and performance. Although financial literacy does not directly improve performance, it strengthens risk management, liquidity control, and operational sustainability before contributing to business outcomes. This finding supports Korompis et al. (2023), Salma et al. (2024), and Widyastuti et al. (2023), who emphasized the importance of translating financial knowledge into resilience and effective business practices. Hypothesis 10 confirms that MSME resilience mediates the relationship between social

innovation and performance. Social innovation first enhances adaptive capacity and resilience before generating improvements in business outcomes. This result supports Iskandar et al. (2024) and Mawardi et al. (2025), who found that innovation and adaptive capacity contribute to MSME sustainability and performance through resilience mechanisms.

Overall, the mediation results indicate that resources and capabilities do not always generate performance directly. Based on RBV and DCT, resilience functions as a conversion mechanism that transforms financial resources, knowledge, and innovation capabilities into sustainable business outcomes (Barney, 1991; Teece et al., 1997). Qualitative findings further confirm that financing, financial literacy, and adaptive innovation strengthen MSMEs' ability to absorb disruptions, maintain operations, and achieve more stable performance.

Conclusion

This study concludes that inclusive banking financing has a positive and significant impact on MSME resilience and performance. Financial literacy and social innovation significantly improve MSME resilience; however, their direct effects on MSME performance are not statistically significant. Furthermore, MSME resilience significantly influences performance and mediates the effects of inclusive banking financing, financial literacy, and social innovation on MSME performance. These findings demonstrate that MSME success is not determined solely by resource availability but also by the ability to transform financial resources, knowledge, and innovation capabilities into resilience, adaptability, and business continuity. The findings support the view that resources and capabilities generate sustainable performance when effectively converted into organizational capabilities.

Practically, this study highlights the importance of an integrated approach to improving MSME performance in Baubau City through inclusive financing access, financial literacy development, social innovation, and resilience-building programs. Financial institutions and policymakers should focus not only on providing capital but also on strengthening MSME capabilities to utilize resources sustainably. This study is limited by its cross-sectional design, geographical scope, and reliance on self-reported data, which may limit broader generalization. Future research should consider longitudinal approaches, broader geographical coverage, objective performance measures, and additional factors such as digital capability, entrepreneurial orientation, and institutional support to further explain MSME resilience and performance mechanisms.

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