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Does financial literacy drive SME success in resource-rich regions?

Lusiana Desy Ariswati, Muhammad Ramadhani Kesuma*, Rohana Nur Aini, Ellen D. Oktanti Irianto, Chandika Mahendra Widaryo, Margareth Henrika

Department of Management, Mulawarman University, Samarinda, East Kalimantan, 75119, Indonesia
*e-mail: ramadhani@feb.unmul.ac.id

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ABSTRACT

This study investigates the relationships among financial literacy, product innovation, risk management, and financial performance in small and medium-sized enterprises (SMEs) located in East Kalimantan, a region in Indonesia characterized by its resource abundance. While prior studies underscore the importance of financial literacy and innovation for SME success, there is limited research focusing on non-urban, commodity-reliant settings. Using a quantitative methodology, this study employs Partial Least Squares Structural Equation Modeling to analyze data gathered from 200 SME owners in non-extractive industries through a structured survey. This study explores whether financial literacy and product innovation directly affect financial performance and whether risk management mediates these dynamics. The findings reveal that financial literacy has a significant positive effect on financial performance, whereas product innovation strengthens risk management but does not directly influence financial outcomes. Additionally, risk management does not mediate these relationships, indicating potential contextual constraints in resource-limited environments. These insights advance the understanding of SME operations in non-urban, resource-dependent regions and highlight the need for customized financial education and innovation. This study provides actionable recommendations for policymakers to enhance SME resilience through targeted strategies, addressing a key gap in the literature on economies tied to natural resources.

Keywords: Financial Literacy, Product Innovation, Risk Management, Financial Performance, SMEs

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) are the cornerstone of Indonesia's economy, significantly contributing to job creation, poverty reduction, and regional progress. In East Kalimantan, a province rich in natural resources and strategically positioned economically, SMEs account for roughly 55% of the provincial Gross Domestic Product (GDP), playing a vital role in promoting economic diversification. However, these enterprises face ongoing challenges that hinder their financial success and viability. The COVID-19 pandemic, combined with unpredictable global commodity prices, has intensified these difficulties, revealing weaknesses such as restricted access to financing, low levels of financial literacy, and limited product innovation. According to recent national data, approximately 20% of SMEs in East Kalimantan fail annually, highlighting the severity of these issues. This study explores how financial literacy and product innovation influence the financial performance of SMEs in East Kalimantan, with risk management as a mediating factor, aiming to fill critical gaps in the literature and offer practical recommendations for policymakers and practitioners.

The economic importance of SMEs in Indonesia is undeniable. They represent over 99% of all businesses and employ approximately 97% of the workforce, serving as a key driver of economic stability and growth. In East Kalimantan, SMEs operate in diverse sectors such as trade, agriculture, and services; however, they face distinct challenges due to the province's reliance on extractive industries such as oil, gas, and mining. This dependence creates a volatile economic landscape that requires SMEs to navigate fluctuating markets and regulatory shifts. The pandemic further disrupted supply chains and reduced consumer demand, disproportionately impacting SMEs with limited financial reserves. Financial literacy, understood as the ability to comprehend and apply financial principles such as budgeting, investment, and debt management, is essential for SME owners to make informed decisions that bolster business resilience. Likewise, product innovation, defined as the creation or improvement of products to meet market needs, is critical for maintaining competitiveness in a globalized and increasingly digital marketplace. However, the interplay of these factors and their effects on financial performance, particularly through risk management, remain underexplored in East Kalimantan.

The central issue addressed in this study is the suboptimal financial performance of SMEs in East Kalimantan, marked by low profitability and high failure rates. Key contributing factors include inadequate financial literacy among SME owners, leading to inefficient resource management and poor financial planning. For example, many owners lack the expertise to develop budgets or evaluate investment opportunities, resulting in missed growth potential and financial errors. Additionally, limited product innovation restricts SMEs' ability to stand out in competitive markets, especially against low-cost, imported goods. The absence of robust risk management practices further exacerbates these challenges, leaving SMEs exposed to external disruptions, such as economic downturns or policy changes. Given the critical role of SMEs in the regional economy, their high failure rate underscores the urgent need to address these issues to support sustainable economic growth in the province of East Kalimantan. Without targeted interventions, the province risks losing the vital economic contributions of SMEs, potentially undermining the national growth targets of 5–6% by 2025.

This study adopts an integrated approach to tackle these challenges by examining the direct impact of financial literacy and product innovation on SME financial performance and investigating the mediating role of risk management. Financial literacy equips SME owners with the skills to optimize cash flow and secure financing, directly improving financial outcomes (Tóth et al., 2023). Similarly, product innovation enables SMEs to adapt to evolving market trends and consumer preferences, enhancing revenue and market share (Foli et al., 2022; Kesuma et al., 2025). Risk management, as a mediator, strengthens these relationships by enabling SMEs to identify, assess, and mitigate financial and operational risks, thus protecting performance against uncertainties (Baz & Ruel, 2021). By combining these elements, this study provides a holistic framework that addresses immediate financial challenges and offers long-term strategies for SME resilience in transitioning economies.

This study pursues two primary objectives. First, it seeks to evaluate the direct effects of financial literacy and product innovation on SME financial performance in East Kalimantan, focusing on measurable indicators such as profitability, liquidity, and revenue growth. Second, it aims to explore how risk management mediates these relationships by examining whether effective risk identification and mitigation strategies enhance the benefits of financial literacy and innovation. These objectives are designed to generate actionable insights for stakeholders, supporting the development of tailored interventions, such as financial literacy programs and innovation workshops, suited to the region's unique needs.

The originality of this research lies in its emphasis on the mediating role of risk management within the context of SMEs in East Kalimantan, a region that has been underrepresented in prior studies. While existing research has examined the direct impact of financial literacy on SME performance, it has largely focused on urban Java, neglecting the distinct economic and cultural dynamics of non-Java provinces (Belás et al., 2018; Tóth et al., 2023). East Kalimantan's reliance on extractive industries introduces unique risks, such as commodity price volatility, which are rarely addressed in SME research. By incorporating risk management as a mediator, this study offers a fresh perspective on how SMEs can utilize internal capabilities (financial literacy and innovation) to address external uncertainties and improve financial performance. Additionally, the focus on product innovation in a resource-rich province adds a new dimension to the literature, as prior studies have often overlooked innovation in such contexts (Foli et al., 2022). This approach is particularly relevant given East Kalimantan's shift toward a greener economy, where SMEs must innovate to remain competitive.

This study addresses two key research gaps in the literature. First, there is a lack of research on the mediating role of risk management in the relationship between financial literacy, product innovation, and financial performance, especially in non-Java regions (Tóth et al., 2022; Belás et al., 2024). Second, existing studies on product innovation in SMEs often fail to account for the unique challenges faced by businesses in resource-dependent regions, where economic volatility increases the need for adaptive strategies (Foli et al., 2022). These gaps are significant as they limit the applicability of existing models to regions such as East Kalimantan, where SMEs operate under distinct economic conditions. By addressing these gaps, this study contributes to the academic discourse by proposing a context-specific framework that integrates financial literacy, innovation, and risk management, and offers insights that are both theoretically sound and practically applicable.

The significance of this research extends beyond academic contributions to the practical implications for SME development in East Kalimantan. The findings are expected to guide policy interventions, such as customized financial education programs to enhance SME owners' decision-making capabilities (Nkwinika & Akinola, 2023). Additionally, by emphasizing product innovation, the study highlights the need for support mechanisms, such as access to digital tools and technology training, to strengthen SME competitiveness (Huong & Anh, 2024). The focus on risk management underscores the importance of equipping SMEs with strategies to navigate economic uncertainties and foster resilience and sustainability (Baz & Ruel, 2021). These insights align with Indonesia's national financial inclusion strategy, which prioritizes SME empowerment in the eastern regions, making this study highly relevant to current policy priorities.

2. LITERATURE REVIEW

The financial performance of small and medium-sized enterprises (SMEs) in resource-abundant regions like East Kalimantan is shaped by a dynamic combination of factors, including financial literacy, product innovation, and risk management. Although these elements have been examined separately, their collective impact, particularly the mediating role of risk management, remains largely unexplored in Indonesia's non-Java regions. This literature review synthesizes existing studies to outline the theoretical foundations, identify empirical gaps, and evaluate measurement approaches relevant to this research. By critically analyzing and comparing various sources, this review establishes the need for a context-specific framework that integrates financial literacy, product innovation, and risk management to enhance the financial outcomes of SMEs in East Kalimantan.

The resource-based view (RBV) theory provides a critical lens for understanding how SMEs utilize internal resources, such as financial literacy and innovation capabilities, to gain competitive advantage. RBV posits that firms with effective resource management, including knowledge and innovation, can optimize resource allocation to improve performance (Ali et al., 2020). For SMEs, financial literacy enables owners to make informed decisions regarding budgeting, investment, and debt management, thereby enhancing their financial results. However, the RBV's emphasis on static resources limits its ability to address the dynamic challenges SMEs face in volatile settings such as East Kalimantan, where commodity price fluctuations and regulatory changes are common. The dynamic capabilities framework complements RBV by highlighting SMEs' ability to adapt and innovate in response to shifting market conditions (Islami & Mulolli, 2024). This perspective underscores how SMEs can reconfigure resources such as product innovation strategies to remain competitive. Additionally, the knowledge-based view emphasizes the role of financial literacy in generating and applying knowledge to foster innovation and performance (Guo, 2025). While these theories provide a strong foundation, their application to SMEs in non-Java regions, such as East Kalimantan, is limited, necessitating further empirical investigation (Foli et al., 2022).

Financial literacy is a key driver of SME performance, equipping owners with the skills necessary to manage financial resources effectively. Key indicators include budgeting expertise, cash flow management, and investment decision-making, all of which contribute to strategic decision-making (Maelani et al., 2024; Odunga, 2024). Research indicates that SME owners with strong financial literacy are better positioned to secure financing and allocate resources efficiently, leading to improved profitability and liquidity (Tóth et al., 2022). However, most studies focus on urban areas, particularly Java, and often neglect the unique challenges faced by SMEs in resource-dependent regions such as East Kalimantan, where access to financial education and infrastructure is constrained (Huong & Anh, 2024). Comparative studies across Southeast Asia highlight that Indonesian SMEs face distinct obstacles, such as socio-economic disparities and complex regulations, requiring region-specific interventions (Pabane et al., 2025; Yuneline & Suryana, 2020). The scarcity of studies tailored to East Kalimantan represents a significant gap, as the province's reliance on extractive industries introduces unique financial risks that demand customized solutions.

Product innovation plays a vital role in SME performance, particularly in competitive and volatile markets. Indicators of product innovation include the development of new products, adaptability to market changes, and differentiation strategies, which enable SMEs to meet evolving consumer needs (Csapi & Balogh, 2020). In resource-rich regions like East Kalimantan, product innovation is crucial for diversifying beyond commodity-reliant sectors, yet research in this area is limited (Wan et al., 2023). Evidence suggests that innovative SMEs can strengthen their market position and financial performance by offering value-added products, but dependence on traditional resources often hinders creativity (Ullah et al., 2023). The innovation diffusion theory complements RBV by explaining how SMEs adopt and disseminate innovative practices, emphasizing the influence of market dynamics and technological access (Khattak et al., 2024). However, this theory's relevance to SMEs in commodity-dependent regions is constrained, as it does not fully address barriers like limited technology or funding access. The lack of research on product innovation in East Kalimantan highlights the need for studies that address these contextual challenges, particularly in the context of post-pandemic recovery and economic diversification (Foli et al., 2022).

Risk management serves as a critical mediator in the relationship between financial literacy, product innovation, and SME financial performance. Effective risk management practices, such as risk identification, assessment, mitigation, and monitoring, enable SMEs to navigate uncertainties like market volatility and regulatory shifts (Al Qubtan et al., 2021; Chakabva et al., 2021). Studies suggest that SMEs with high financial literacy are better equipped to implement robust risk management strategies, which enhance financial stability and performance (Duréndez Gómez-Guillamón et al., 2023). However, the mediating role of risk management is underexplored in non-Java regions, where SMEs face unique risks, such as commodity price volatility and limited access to risk mitigation tools (Adam & Alarifi, 2021). Most existing research focuses on large firms or urban settings, limiting its applicability to SMEs in resource-dependent areas like East Kalimantan (Jamai et al., 2021). Measurement indicators for risk management, such as risk perception and crisis response strategies, are essential for assessing SME resilience, but these are rarely tailored to small business contexts (Shahzad et al., 2021). This gap underscores the need for research that examines how risk management mediates the effects of financial literacy and innovation on SMEs operating in volatile economic environments.

Integrating financial literacy, product innovation, and risk management into a unified model offers a novel perspective on SME performance. While individual studies have explored these factors, few have investigated their combined effects, particularly in non-Java regions (Tóth et al., 2023). Integrated models provide a comprehensive framework for understanding how these elements interact to enhance SME resilience, offering insights into strategic decision-making in uncertain contexts (Jamai et al., 2021). For example, financial literacy enhances opportunity recognition, which, when paired with effective risk management, can amplify the benefits of product innovation (Anwar et al., 2020). However, the lack of empirical studies in East Kalimantan limits the applicability of these models, as regional factors such as reliance on extractive industries introduce distinct risks and opportunities (Wan et al., 2023). Comparative analyses across Southeast Asia indicate that Indonesian SMEs face unique challenges, such as regulatory barriers and limited access to financial education, necessitating localized frameworks (Huong & Anh, 2024). This study addresses these gaps by developing a context-specific model that integrates these factors and provides both theoretical and practical contributions.

However, significant research gaps exist in the literature. First, there is a scarcity of studies examining the mediating role of risk management in the relationships between financial literacy, product innovation, and SME performance in non-Java regions (Belás et al., 2018; Tóth et al., 2022). Second, research on product innovation in commodity-rich regions such as East Kalimantan is limited, particularly regarding strategies for diversification and competitiveness (Ullah et al., 2023). Third, existing measurement indicators for financial literacy, innovation, and risk management are often designed for urban or large-firm contexts and lack relevance to SMEs in resource-dependent areas (Chakabva et al., 2021). These gaps highlight the need for empirical research that addresses the unique challenges SMEs face in East Kalimantan, particularly in the context of economic transitions and post-pandemic recovery.

The novelty of this study lies in its integrative approach, which combines financial literacy, product innovation, and risk management into a mediation model tailored to SMEs in East Kalimantan. Drawing on multiple theoretical frameworks, including the RBV, dynamic capabilities, and innovation diffusion, this study provides a holistic analysis of SME performance (Khattak et al., 2024). The development of context-specific indicators for financial literacy (e.g., budgeting and investment knowledge), product innovation (e.g., new product development and market adaptability), and risk management (e.g., risk perception and mitigation strategies) ensures relevance to the regional context (Csapi & Balogh, 2024; Csapi & Balogh, 2020). Additionally, the study's focus on non-Java regions informs policy recommendations, such as targeted financial education and innovation support programs, aligning with Indonesia's national financial inclusion strategy (Awaluddin, 2025; Febriyanto et al., 2024). By addressing these gaps and proposing a novel framework, this study enhances the understanding of SME resilience and performance in resource-rich transitioning economies.

3. METHODOLOGY

This study employs a quantitative approach to examine the impact of financial literacy and product innovation on the financial performance of small and medium-sized enterprises (SMEs) in East Kalimantan, Indonesia, with risk management serving as a mediating variable. A cross-sectional design was adopted, utilizing primary data gathered through structured questionnaires administered to SME owners in the non-extractive sectors of trade and services in the region. Structural equation modeling (SEM) is used to analyze the intricate relationships among the variables, offering a robust framework for evaluating both direct and indirect effects within a regional context (Utari et al., 2022). SEM was selected because of its capacity to test mediation effects and capture the complex dynamics of financial literacy, innovation, and risk management, which are essential for understanding SME performance in a resource-abundant province such as East Kalimantan. This study addresses a critical research gap by focusing on non-Java regions, where unique economic challenges, such as dependence on extractive industries and limited access to financial education, demand context-specific investigations (Maksum et al., 2024).

A purposive sampling method was used to select participants, with eligibility criteria including at least two years of business operation, active involvement in non-extractive sectors (trade and services), and location within East Kalimantan (Aini et al., 2025a). These criteria ensure the sample reflects SMEs navigating diverse market dynamics while remaining relevant to the region's economic landscape (Mareai Senan, 2024). Purposive sampling is well-suited for this study, as it enables targeted data collection from SME owners who can provide valuable insights into the specific challenges of operating in a resource-dependent region (Yazbeck-Karam et al., 2024). This approach strengthens the study's ability to produce findings that are both representative and contextually meaningful (Aini et al., 2025b).

The sample size was determined based on Hair's guidelines for SEM studies, which suggest 10 to 15 observations per estimated parameter to ensure sufficient statistical power and model stability (Maksum et al., 2024; Suman, 2019). The research model comprises four latent variables: financial literacy, product innovation, risk management, and financial performance, each measured by four indicators, totaling 16 indicators. With a minimum requirement of 12 observations per indicator, a sample size of 192 respondents is required, providing adequate power for robust SEM analysis while remaining practical within the regional context. This sample size aligns with SEM study recommendations, ensuring model stability and reliable estimation of mediation effects (Pratono, 2021).

Data were collected through a structured questionnaire using a 5-point Likert scale designed to measure the four latent variables. The questionnaire was adapted from validated instruments, such as the Financial Literacy Scale for financial literacy and the Product Innovation Index for innovation, ensuring alignment with established measures (Aysan et al., 2024). Reliability was evaluated using Cronbach's alpha, with a minimum threshold of 0.7 to confirm internal consistency (Kaczmarek et al., 2021). The indicators for each variable, along with their reference sources, are presented in the table below, incorporating context-specific measures tailored to SMEs in East Kalimantan (Alatassi & Pillai, 2024). See Table 1

Table 1. Variable's Measurement

Variable	Indicator	References
Financial Literacy	Budgeting Skills	Maelani et al. (2024)
	Cash Flow Management	
	Investment Knowledge	
	Debt Management	
Product Innovation	New Product Development	Csapi & Balogh (2020)
	Market Adaptability	
	Technology Utilization	
	Product Differentiation	
Risk Management	Risk Identification	Chakabva et al. (2021)
	Risk Evaluation	
	Risk Mitigation	
	Risk Monitoring	
Financial Performance	Profitability	Alatassi & Pillai (2024)
	Liquidity	
	Solvency	
	Revenue Growth	

Source: Data Processed (2025)

The research model uses SEM to test the hypothesized relationships, including the direct effects of financial literacy and product innovation on financial performance and the mediating role of risk management. SEM is particularly appropriate for this study because of its ability to model complex relationships and assess mediation effects, accommodating non-normal data distributions often encountered in SME research (Baz & Ruel, 2021). The analysis was performed using SmartPLS software, which is well-suited for exploratory research and mediation testing in cross-sectional studies (Moussa &

El-Dakhakhni, 2022). The SEM process involves two phases: the measurement model, which evaluates the validity and reliability of indicators (e.g., loading factors, average variance extracted, and composite reliability), and the structural model, which assesses path coefficients and mediation effects. Bootstrapping techniques were applied to estimate the significance of indirect effects, providing robust insights into the mediating role of risk management (Maksum et al., 2024).

4. RESULT AND DISCUSSION

The outer model analysis assesses the validity and reliability of the constructs: financial literacy (X1), product innovation (X2), risk management (M), and financial performance (Y). Convergent validity is evaluated using outer loadings and average variance extracted (AVE), while reliability is measured through Cronbach's alpha and composite reliability. Discriminant validity is verified using the Fornell-Larcker criterion, and multicollinearity is examined via the variance inflation factor (VIF) (Table 2)

Table 2. Outer Model Results

Construct	Indicator	Outer Loading	VIF
Financial Literacy (X1)	FL.1 (Budgeting Skills)	0.727	1.473
	FL.2 (Cash Flow Management)	0.833	1.889
	FL.3 (Investment Knowledge)	0.765	1.640
	FL.4 (Debt Management)	0.799	1.596
Financial Performance (Y)	FP.1 (Profitability)	0.888	2.685
	FP.2 (Liquidity)	0.855	2.176
	FP.3 (Solvency)	0.844	2.142
	FP.4 (Revenue Growth)	0.870	2.457
Product Innovation (X2)	PI.1 (New Product Development)	0.764	1.617
	PI.2 (Market Adaptability)	0.757	1.371
	PI.3 (Technology Utilization)	0.876	1.890
	PI.4 (Product Differentiation)	0.798	1.536
Risk Management (M)	RM.1 (Risk Identification)	0.769	1.567
	RM.2 (Risk Evaluation)	0.785	1.471
	RM.3 (Risk Mitigation)	0.708	1.474
	RM.4 (Risk Monitoring)	0.843	1.905

Source: Data Processed (2025)

Outer loadings, ranging from 0.708 to 0.888, surpassed the 0.7 threshold, indicating that each indicator effectively represented its construct. The VIF values, between 1.371 and 2.685, are below 5, confirming the absence of multicollinearity issues among indicators (Table 3).

Table 3. Construct Realibility and Validity

Construct	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
Financial Literacy (X1)	0.789	0.798	0.863	0.611
Financial Performance (Y)	0.887	0.888	0.922	0.747
Product Innovation (X2)	0.784	0.841	0.858	0.605
Risk Management (M)	0.784	0.799	0.859	0.605

Source: Data Processed (2025)

Cronbach's alpha values (0.784–0.887) and composite reliability scores (rho_a: 0.798–0.888; rho_c: 0.858–0.922) exceeded the 0.7 threshold, demonstrating strong internal AVE values (0.605–0.747) above 0.5 confirm convergent validity, indicating that each construct accounts for more than 50% of the variance in its indicators. Discriminant validity is supported by the Fornell-Larcker criterion, with inter-construct correlations (0.173–0.617) lower than the square root of the AVE for each construct (Table 4).

Table 4. Discriminant Validity

Construct	X1	Y	X2	M
Financial Literacy (X1)	-			
Financial Performance (Y)	0.617	-		
Product Innovation (X2)	0.232	0.218	-	
Risk Management (M)	0.192	0.173	0.456	-

Source: Data Processed (2025)

Hypothesis testing was performed using path coefficients and bootstrapping to assess the significance of direct and indirect effects. The results are summarized in Table 5.

Table 5. Hypothesis Testing

Relationship	β	T-Statistic	P-Value	Conclusion
X1 → Y (Financial Literacy → Financial Performance)	0.536	7.948	0.000	Significant
X1 → M (Financial Literacy → Risk Management)	0.043	0.439	0.661	Not Significant
X2 → Y (Product Innovation → Financial Performance)	0.105	1.410	0.159	Not Significant
X2 → M (Product Innovation → Risk Management)	0.386	5.706	0.000	Significant
M → Y (Risk Management → Financial Performance)	0.084	1.220	0.222	Not Significant
X1 → M → Y (Financial Literacy → Risk Management → Financial Performance)	0.004	0.326	0.744	Not Significant
X2 → M → Y (Product Innovation → Risk Management → Financial Performance)	0.032	1.158	0.247	Not Significant

Source: Data Processed (2025)

The first hypothesis, which proposes that financial literacy significantly and positively affects financial performance, is supported ($\beta = 0.536$, $p = 0.000$). The second hypothesis, which suggests that product innovation positively influences financial performance, is not supported ($\beta = 0.105$, $p = 0.159$), although the total effect is marginally significant ($\beta = 0.137$, $p = 0.064$). The third hypothesis, which posits that risk management mediates the relationship between financial literacy and financial performance, is not supported ($\beta = 0.004$, $p = 0.744$). The fourth hypothesis, which states that risk management mediates the relationship between product innovation and financial performance, is also not supported ($\beta = 0.032$, $p = 0.247$).

The significant direct effect of financial literacy on financial performance ($\beta = 0.536$, $p = 0.000$) aligns with the resource-based view (RBV), which suggests that internal resources, such as financial knowledge, enhance competitive advantages (Tóth et al., 2022; Nkwinika & Akinola, 2023). Financial literacy enables SME owners to excel in budgeting, cash flow management, and debt management, directly improving their profitability, liquidity, and solvency. This finding is consistent with studies in developing economies, which show that financially literate owners make strategic decisions that optimize resource allocation and secure favorable credit terms (Tóth et al., 2023; Huong & Anh, 2024). The substantial effect size (f-square = 0.405) highlights the critical role of financial literacy in East Kalimantan, where SMEs face unique challenges due to reliance on extractive industries and volatile commodity markets. Unlike research focused on urban Java, this study's emphasis on a non-urban region underscores the contextual importance of financial literacy in addressing financial risks specific to resource-rich areas, offering a novel contribution to the literature (Al-Mhdawi et al., 2022).

The non-significant direct effect of product innovation on financial performance (β = 0.105, p = 0.159) contrasts with prior studies, which suggest that innovation drives competitiveness and financial outcomes (Foli et al., 2022; Tajeddini et al., 2023). The marginally significant total effect (β = 0.137, p = 0.064) indicates a weak overall influence, suggesting that the financial benefits of product innovation may depend on complementary strategies such as market expansion or technological integration. In East Kalimantan, the dominance of commodity-based economies may hinder SMEs' ability to convert innovation into immediate financial gains, as barriers such as limited funding and technical expertise restrict research and development efforts (Tajeddini et al., 2023). This finding diverges from studies conducted in urban settings but aligns with research on resource-dependent regions, where structural constraints limit the direct impact of innovation (Wan et al., 2023). The novelty of this study lies in identifying these contextual barriers and emphasizing the need for tailored innovation support in commodity-rich regions.

The significant effect of product innovation on risk management (β = 0.386, p = 0.000) supports the dynamic capabilities framework, which highlights the role of innovation in adapting to environmental changes (Tajeddini et al., 2023). Practices such as new product development and technology utilization enable SMEs to anticipate and manage risks such as market volatility, thereby enhancing resilience. This finding is consistent with studies linking innovation to improved risk management capabilities (Csapi & Balogh, 2020; Huong & Anh, 2024). In East Kalimantan, where SMEs face fluctuations in resource markets, innovations such as e-commerce adoption can strengthen risk identification and mitigation, providing a competitive advantage. This result contributes to the literature by demonstrating the relevance of innovation in risk management within a resource-dependent context, an area that has been underexplored in prior research (Chakabva et al., 2021).

The non-significant mediating role of risk management in the relationships between financial literacy and financial performance (β = 0.004, p = 0.744) and between product innovation and financial performance (β = 0.032, p = 0.247) challenges prior assumptions that risk management amplifies the effects of financial literacy and innovation (Ferreira & Silva, 2022; Silva Rampini & Berssaneti, 2024). This suggests that SMEs in East Kalimantan may lack the resources or frameworks to implement effective risk management practices, limiting their mediating role. The non-significant effect of financial literacy on risk management (β = 0.043, p = 0.661) indicates that financial knowledge alone does not lead to robust risk management strategies, possibly due to limited access to tools like insurance (Al Qubtan et al., 2021). Similarly, the non-significant effect of risk management on financial performance (β = 0.084, p = 0.222) suggests that risk management practices do not directly enhance financial outcomes in this context. These findings contrast with studies in urban settings but align with research highlighting resource constraints in non-urban SMEs (Adam & Alarifi, 2021). The study's novelty lies in revealing the limited mediating role of risk management in a resource-rich region, suggesting that alternative mediators, such as access to financing, may be more relevant (Jamai et al., 2021).

The moderate R-square for financial performance (0.3) indicates that while financial literacy and product innovation contribute to financial outcomes, other factors, such as macroeconomic conditions or access to capital, may also play a role. The lower R-square for risk management (0.147) reflects the challenges of implementing risk management in resource-constrained SMEs. The findings highlight the influence of contextual factors in Southeast Asia, such as cultural attitudes toward financial education and limited institutional support, which shape the effectiveness of financial literacy and innovation (Huong & Anh, 2024; Tóth et al., 2023). Unlike studies focused on urban Java, this research provides a context-specific model for East Kalimantan, addressing a gap in the literature on non-urban, resource-dependent regions (Tóth et al., 2022; Belás et al., 2024).

This study confirms that financial literacy significantly enhances SME financial performance in East Kalimantan, while product innovation strengthens risk management but does not directly impact financial outcomes. The non-significant mediating role of risk management highlights the need for alternative pathways in resource-constrained settings. By addressing a gap in non-urban SME research, the findings provide novel insights into the contextual challenges of resource-rich regions, offering practical implications for policy and education initiatives to foster SME resilience and competitiveness.

5. CONCLUSION

This research examines the effects of financial literacy and product innovation on the financial performance of small and medium-sized enterprises (SMEs) in East Kalimantan, with risk management as a mediating factor, employing a Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The results demonstrate that financial literacy significantly boosts financial performance, highlighting its vital role as an internal resource for SMEs in a non-urban, resource-abundant region. This finding supports the resource-based view, which underscores the importance of financial knowledge in enhancing resource allocation, leading to improved profitability, liquidity, and solvency. In contrast, product innovation does not directly influence financial performance but significantly enhances risk management capabilities, aligning with the dynamic capabilities framework by showing how innovation enables SMEs to navigate market uncertainties. The lack of a significant mediating effect from risk management indicates that structural barriers, such as limited access to risk mitigation tools, restrict its effectiveness in this context, providing a fresh perspective on the challenges faced by SMEs in resource-dependent economies. These insights contribute to the literature by addressing a research gap in non-urban SME studies, particularly in East Kalimantan, where reliance on extractive industries creates distinct financial and operational dynamics. Practically, the findings advocate for customized financial literacy initiatives and innovation support, such as training in digital technologies, to strengthen SME resilience and competitiveness. Policymakers can leverage these results to inform Indonesia's National Financial Inclusion Strategy, focusing on region-specific interventions. Future studies should employ longitudinal designs to investigate temporal causality and explore alternative mediators, such as access to financing, to refine the model. Comparative analyses across different regions or sectors could further broaden the understanding of SME performance dynamics, enhancing the applicability of the findings.

Ethical Approval
Ethical approval was not required for this study.

Informed Consent Statement
All participants were informed of the purpose of the study, and informed consent was obtained prior to data collection. Participation was voluntary, and all responses were kept confidential and used solely for academic research purposes.

Authors' Contributions
LDA contributed to refining the research framework, administering the survey, and validating data collection procedures. MRK served as the lead researcher and corresponding author, overseeing the study design, PLS-SEM analysis, and development of the final manuscript. RNA supported the literature review, theoretical alignment, and initial drafting of the background and conceptual sections. EDOI conducted statistical processing, model assessment, and interpretation of structural results. CMW assisted in preparing analysis tables, organizing findings, and ensuring coherence between results and discussion. MH contributed to proofreading, final manuscript editing, and preparing the submission according to journal formatting guidelines.

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Notes on Contributors

Lusiana Desy Ariswati
https://orcid.org/0009-0006-1476-4396
Lusiana Desy Ariswati is a lecturer in the Department of Management, Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. With expertise in capital markets and finance, her academic and research activities focus on financial instruments, market dynamics, and investment strategies in emerging economies.

Muhammad Ramadhani Kesuma
https://orcid.org/0009-0001-5816-5786
Muhammad Ramadhani Kesuma is a lecturer in the Department of Management, Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. With a background in financial management and expertise in international financial management, his research encompasses qualitative and quantitative studies across various industrial sectors. His current interests include financial technology (fintech) and financial literacy, with a focus on fostering sustainable economic behaviors.

Rohana Nur Aini
https://orcid.org/0009-0004-4676-5743
Rohana Nur Aini is a lecturer in the Department of Management, Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. Her expertise lies in organizational behavior, with research interests in leadership, employee engagement, and organizational culture in both public and private institutions.

Ellen D. Oktanti Irianto
https://orcid.org/0009-0002-3710-1772
Ellen D. Oktanti Irianto is a lecturer in the Department of Management, Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. Her research expertise focuses on sustainable finance, particularly on integrating environmental, social, and governance (ESG) considerations into financial and investment practices.

Chandika Mahendra Widaryo
https://orcid.org/0009-0004-4049-0355
Chandika Mahendra Widaryo is a lecturer in the Department of Management, Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. With expertise in corporate governance, compliance, and the ethics of financial management, his academic interests include transparency, accountability, and ethical practices in corporate financial systems.

Margareth Henrika
https://orcid.org/0009-0006-0325-2459
Margareth Henrika is a lecturer in the Department of Management, Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. Specializing in household finance, her research explores financial decision-making at the household level, consumer behavior, and financial resilience in diverse socioeconomic contexts.

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