

Factors Affecting the Financial Performance of MSMEs in 3T (Frontier, Outermost, and Underdeveloped) Areas: The Moderating Role of Financial Literacy

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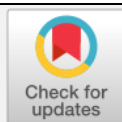
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ABSTRACT

This study investigates the factors influencing the financial performance of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia's 3T regions – lagging (tertinggal), frontier (terdepan), and outermost (terluar) – with financial literacy positioned as a moderating variable. Despite playing a crucial role in driving local economic growth, MSMEs in 3T areas face persistent challenges such as limited market access, inadequate infrastructure, and a shortage of skilled human resources. The study focuses on internal perspective factors, the use of accounting applications, and marketplace platforms as potential determinants of financial performance. Using a quantitative approach, a survey was conducted among MSME actors in Bitung City, a designated 3T area. The data were analyzed using SmartPLS regression. The findings indicate that accounting applications alone do not significantly enhance financial performance without sufficient financial literacy. Conversely, marketplace utilization substantially improves performance by expanding market reach and boosting sales. Internal perspectives show limited influence unless supported by training or external assistance. Although financial literacy does not statistically moderate the relationships tested, practical experience emerges as a critical component. The study underscores the importance of combining digital tools, experiential learning, and institutional support to strengthen the financial performance of MSMEs in remote and underserved regions.

Keywords: Accounting Information Systems; Financial Literacy; Financial Performance; Marketplace; MSMEs; 3T Regions.

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in Indonesia's economy by creating jobs, absorbing labor, and contributing significantly to GDP (Ariyanti, 2023; Yanti, 2019). However, the development of MSMEs in 3T regions—underdeveloped, frontier, and outermost areas—faces far greater challenges compared to those in more developed regions. These enterprises often encounter substantial barriers to improving their financial performance, such as limited infrastructure, restricted access to formal financial services, and generally low levels of education (Wibowo, 2024). Consequently, identifying the key factors that influence the financial performance of MSMEs in these regions is critical.

Both internal and external factors are known to affect MSME financial performance (Audretsch et al., 2023; Jalil et al., 2022; Savvakis et al., 2024). Internally, factors such as business management skills, capital availability, and product innovation play an important role (Day & Wensley, 1988; Nguyen et al., 2023). Externally, government support, access to technology, and local and regional market dynamics are also significant. However, one factor that is often overlooked in this discussion is financial literacy—a foundational competency for effective business decision-making (Al-shami et al., 2024; Rahmawati et al., 2023).

Financial literacy encompasses a range of knowledge and skills, including the ability to understand financial risks, plan investments, manage debt, and create effective budgets (Mazzoli et al., 2024; Zhao et al., 2024). MSME actors in 3T regions often lack this essential financial knowledge, increasing their vulnerability to business failure, particularly in unstable or highly competitive markets. In contrast, strong financial literacy enables MSMEs to seize opportunities, mitigate risks, and adapt more effectively to external challenges.

3T regions differ significantly from other areas in terms of geography, demographics, and economic structure. MSMEs operating in these regions are particularly susceptible to external shocks due to insufficient infrastructure, limited technological access, and dependence on informal markets. This vulnerability is compounded by low levels of financial knowledge, which further inhibits their ability to engage with formal financial institutions. In such a context, financial literacy may serve as a moderating factor that strengthens the relationship between core business variables and financial performance.

The Indonesian government has implemented various support programs for MSMEs in 3T areas, including capital assistance and entrepreneurship training. However, the effectiveness of these programs largely depends on the financial management capacities of the recipients. With adequate financial literacy, these forms of support can be used not only to meet short-term operational needs but also to enhance long-term business sustainability. Thus, integrating financial literacy into MSME development strategies is essential for 3T regions.

This research also aligns with the broader goals of the Sustainable Development Goals (SDGs), particularly those aimed at expanding financial inclusion and reducing economic inequality. Financial inclusion is a key indicator of economic development, especially in areas that continue to face access-related challenges. By improving financial literacy, MSMEs are more likely to participate in formal financial systems, thereby improving their financial performance and resilience.

Beyond the immediate advantages for individual MSMEs, financial literacy contributes to the long-term economic development of 3T regions. By equipping entrepreneurs with the tools to manage their finances independently, reliance on external assistance can be reduced, leading to more sustainable and inclusive local economies.

This study seeks to investigate the determinants of MSME financial performance in 3T regions and examine the moderating role of financial literacy in this context. By framing

financial literacy as a moderating variable, this research offers new insights into promoting financial sustainability among MSMEs in structurally disadvantaged areas. The findings aim to inform policymakers in designing more targeted and effective support programs that integrate financial literacy components. Ultimately, this study represents a critical step toward formulating a financial literacy-driven development strategy for MSMEs in underdeveloped, frontier, and outermost regions, thereby contributing to more balanced and sustainable national economic growth.

2. Literature Review

2.1. The Resource-Based View (RBV)

The Resource-Based View (RBV) is one of the foundational theories in the field of strategic management (Nguyen et al., 2023; Szymaniec-Mlicka, 2016). RBV emphasizes that a firm's internal resources and capabilities are the primary determinants of its competitiveness and long-term success (Park et al., 2004). Unlike approaches that focus predominantly on external market forces or industry conditions, RBV underscores the strategic importance of how firms acquire, develop, and deploy internal resources.

According to this perspective, a firm's ability to gain and sustain a competitive advantage depends on the uniqueness and effectiveness of its internal assets. The VRIN framework—Valuable, Rare, Inimitable, and Non-substitutable—articulates the criteria that resources must meet to contribute to sustained competitive advantage (Harahap, 2021; Uyanik, 2023). Resources that satisfy these attributes are seen as strategic assets that can help firms outperform competitors. Some versions of RBV further develop this into the VRIO framework, where the “O” stands for Organization, referring to the firm's ability to organize and leverage these resources effectively.

The core implication of the RBV is that firms should prioritize internal development rather than relying excessively on external factors. This involves investing in research and development (R&D), enhancing workforce capabilities, and acquiring technologies that strengthen competitiveness. Moreover, RBV is closely aligned with differentiation strategies, as firms strive to offer products or services that are difficult for competitors to replicate.

RBV has been widely applied across industries, including public institutions, healthcare, and marketing. For instance, it has been used to explain how marketing-related resources influence competitive advantage and performance outcomes (Davicik & Sharma, 2016; Uyanik, 2023). Furthermore, RBV can be integrated with other strategic frameworks—such as strategic orientation and knowledge management—to enhance organizational performance. Empirical studies demonstrate that firms that effectively align their internal resources with strategic objectives are more capable of adapting to market changes and driving innovation (Hendi et al., 2022; Widoutomo et al., 2023).

A key strength of the RBV is its recognition of human resources as a source of intangible value. Organizations that leverage their human capital—skills, knowledge, and expertise—can achieve superior performance outcomes. This perspective is supported by research highlighting the role of strategic human resource management in fostering innovation and organizational adaptability (Barrutia & Echebarria, 2015; Kusumastuti et al., 2018). Das affirms that this interpretation aligns with the growing emphasis on human capital as a driver of strategic success in dynamic environments (Das, 2019).

2.2. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a widely recognized framework used to understand the factors that influence users' acceptance of new technologies (Davis, 1989). According to TAM, two primary determinants shape users' behavioral intentions to adopt technology: perceived usefulness and perceived ease of use (Davis, 1989; German Ruiz-Herrera et al., 2023; Pesak et al., 2019; Venkatesh & Bala, 2008). This model has been extensively applied across various domains, including accounting, where it serves as a theoretical foundation for examining how users adopt financial technologies (Lee & Wan, 2010).

Accounting applications are particularly valuable tools for enhancing financial reporting, improving data accuracy, and streamlining financial operations. Businesses that adopt these technologies often experience more efficient financial management and increased user engagement. Empirical studies have shown that implementing advanced accounting systems can positively impact financial performance by increasing operational efficiency and supporting more informed decision-making (Togun et al., 2022). These findings align with TAM's core proposition—that users are more likely to adopt and benefit from a technology if they perceive it as useful, ultimately contributing to better financial outcomes.

Perceived ease of use is another critical factor driving the adoption of accounting software. When employees find a system intuitive and easy to navigate, they are more likely to engage with it regularly (Rahmah Fadillah et al., 2024). This leads to improved accuracy and productivity in financial reporting. The relevance of ease of use is especially pronounced in the context of small and medium-sized enterprises (SMEs), which often lack the capacity to deploy complex accounting systems. Nevertheless, research indicates that SMEs that successfully adopt user-friendly accounting applications tend to perform better financially (Suryanto et al., 2022).

An important yet often overlooked factor in the adoption of accounting technologies is financial literacy. Users with higher levels of financial literacy are more likely to understand and effectively use accounting software. Studies suggest that improving employees' financial literacy can enhance their ability to use accounting tools, thereby contributing to improved financial performance (Li et al., 2024). In line with TAM, this underscores the importance of training and organizational support in fostering a culture that embraces technology adoption.

2.3. Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are business entities that play a pivotal role in expanding employment opportunities and providing widespread economic services to the community. MSMEs contribute significantly to income distribution, support local economic growth, and serve as a foundation for national economic stability.

The contributions of MSMEs help alleviate the burden on the government in terms of job creation and economic development. In addition to generating substantial tax revenue, MSMEs also contribute to reducing unemployment in Indonesia. The establishment and growth of MSMEs are considered strategic solutions to address economic and labor market challenges. With their deep integration into community-level economic activities, MSMEs often serve as primary sources of household income, further emphasizing their strategic importance (Saputri, 2014). Various support mechanisms, including access to low-interest loans, have been introduced to facilitate the development of MSMEs.

According to Hastuti et al., MSMEs in Indonesia are categorized based on their capital and annual revenue as follows (Hastuti et al., 2020):

- **Micro Enterprises**

- 1) Possess a net worth of no more than IDR 50,000,000 (excluding land and buildings of the business premises);
- 2) Generate annual sales revenue of no more than IDR 300,000,000.

- **Small Enterprises**

- 1) Have a net worth of more than IDR 50,000,000 but not exceeding IDR 500,000,000 (excluding land and buildings);
- 2) Report annual sales revenue of more than IDR 300,000,000 up to IDR 2,500,000,000.

These classifications form the basis for determining eligibility for financial assistance, business development programs, and policy interventions aimed at supporting the sustainability and growth of MSMEs.

2.4. Accounting Applications

According to the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use are the two primary factors that influence technology acceptance (Davis, 1989). TAM suggests that users are more likely to adopt a technology if they believe it enhances their performance and is easy to use. In the context of MSMEs, this model is particularly relevant in assessing how accounting applications contribute to financial performance. Perceived usefulness refers to the extent to which users believe that the technology will improve their financial outcomes, while perceived ease of use pertains to the user-friendliness of the application. This study examines how these two TAM constructs affect the financial success of MSMEs. Accounting software can support financial management by providing accurate, timely data and simplifying the monitoring of cash flow and expenditures, thereby improving overall efficiency and decision-making.

2.5. Internal Perspective

In strategic management, the internal perspective highlights the importance of an organization's internal resources and capabilities in achieving superior financial performance and competitive advantage. According to Nguyen et al., the internal perspective focuses on leveraging and developing firm-specific resources to create value and achieve business objectives (Nguyen et al., 2023). This perspective draws on the Resource-Based View (RBV), which posits that sustainable competitive advantage is derived from resources that are valuable, rare, inimitable, and non-substitutable. In the context of MSMEs, internal elements such as managerial expertise, employee competencies, and organizational capabilities are critical to driving financial success.

2.6. Marketplace

A marketplace, particularly in digital form, refers to an online platform that connects buyers and sellers to facilitate transactions (Afandi, 2023). In the digital economy, online marketplaces have become a vital component of business strategies. From the perspective of the RBV, marketplaces can be seen as strategic resources that enhance competitive advantage through various means (Nandya et al., 2024). These include access to a broader customer base, operational efficiency, market intelligence, and product innovation. Technological capabilities, data analytics, innovation capacity, and digital infrastructure are essential resources for firms to effectively utilize marketplaces. By integrating these tools, businesses can achieve increased

revenue, cost efficiency, and improved financial performance. Moreover, the use of digital marketplaces supports risk diversification and enhances resilience in dynamic market environments.

2.7. Financial Literacy

Financial literacy refers to the knowledge and skills required to manage financial resources effectively and make informed decisions (Al-shami et al., 2024). It plays a critical role in enabling businesses to improve financial decision-making, avoid costly errors, and enhance overall performance. In the digital age, financial literacy has become increasingly important as businesses incorporate digital platforms and accounting applications into their operations. It bridges the relationship between digital tools—such as online marketplaces and accounting software—and a firm's financial performance. Financially literate users are more capable of analyzing data, interpreting financial information, and maximizing the benefits of technological tools to support strategic decisions.

2.8. Financial Performance

Financial performance is a key indicator used by stakeholders, investors, and firms to assess the financial stability, efficiency, and long-term viability of an organization. It reflects the ability of a business to generate revenue, control costs, and sustain profitability over time (Adiputra et al., 2023; Apriono et al., 2023). Ferdous et al. found that the use of online trading platforms and digital technologies improves financial performance by enhancing operational efficiency and opening access to new markets (Ferdous et al., 2024). Hunt and Madhavaram showed that online commerce platforms enable better market segmentation and innovation based on customer feedback, which in turn drives revenue growth (Hunt & Madhavaram, 2020). The integration of digital technologies and analytics in these platforms has been found to increase both efficiency and profitability. Puspitasari et al. also observed that such platforms help businesses diversify their markets and reduce business risks, further contributing to financial sustainability (Puspitasari et al., 2023).

3. Research Methodology

A quantitative approach was adopted in this study, with a structured questionnaire designed to measure the relevant research variables. The construct of internal perspective was operationalized through four indicator items, which were adapted from previous studies (Meyer, 2007; Nguyen et al., 2023). The accounting application construct was measured using seven items adapted from previous studies (Abu-Taieh et al., 2022; Menon & Shilpa, 2023). Marketplace usage was evaluated using three items adapted from earlier research (Cano et al., 2023; Puspitasari et al., 2023). Financial literacy was measured using six items adapted from prior work (Rahmawati et al., 2023), while financial performance was assessed using four items adapted from previous research (Nguyen et al., 2023).

All items were rated on a five-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5). **Table 1** presents a detailed description of the constructs, corresponding measurement items, loading factors, and references supporting their development.

Table 1. Variable Descriptions and Convergent Validity

Variable	Item Code	Item Description	Loading Factor	Reference(s)
Accounting Application	X1.1	The price of the application is affordable and does not interfere with my business's financial performance.	0.859	Abdalla (2024); Abu-Taieh et al. (2022); Menon & Shilpa (2023); Tusyanah et al. (2021)
	X1.2	The performance of the accounting application I use supports financial performance calculations.	0.855	
	X1.3	The accounting application I use is stable.	0.845	
	X1.4	The accounting application is flexible enough to meet my business needs.	0.815	
	X1.5	The accounting application I use is easy to operate.	0.804	
	X1.6	The accounting application aligns with my preferences.	0.816	
	X1.7	It is easy to communicate with the vendor of the accounting application.	0.773	
Internal Perspective	X2.1	My business's current capabilities and core technologies help increase capital.	0.953	Meyer (2007); Nguyen et al. (2023)
	X2.2	I manage my business based on core capabilities, and sales continue to grow.	0.960	
	X2.3	All strategic initiatives originate from my business-specific skills.	0.954	
	X2.4	My business targets market opportunities that align with its core competencies.	0.893	
Marketplace Usage	X3.1	Using marketplaces reduces marketing costs.	0.910	Cano et al. (2023); Puspitasari et al. (2023)
	X3.2	Promotional activities are easier through marketplaces.	0.912	
	X3.3	Marketplaces help increase sales outside of my business location.	0.862	
Financial Literacy	Z1.1	I understand the importance of preparing financial reports.	0.931	Rahmawati et al. (2023)

Variable	Item Code	Item Description	Loading Factor	Reference(s)
	Z1.2	I understand how to prepare financial statements.	0.957	
	Z1.3	I understand how to calculate the rate of return on capital.	0.955	
	Z1.4	I understand how to calculate return on sales.	0.950	
	Z1.5	I understand how to calculate return on assets.	0.962	
	Z1.6	I understand how to calculate return on investment.	0.892	
Financial Performance	Y1.1	My return on capital has increased.	0.905	Nguyen et al. (2023)
	Y1.2	My business's return on sales has improved.	0.919	
	Y1.3	My business's return on assets has increased.	0.856	
	Y1.4	My return on investment has increased.	0.907	

This study was conducted in North Lembeh Sub-district, Bitung City, which has been designated as both a Digital City and a Special Economic Zone (SEZ), and is classified as a 3T area (disadvantaged, frontier, and outermost). Data were collected directly from all 28 registered MSMEs in North Lembeh, thereby making the total population equal to the sample due to the small size.

Questionnaires were adapted from previous validated studies and distributed via Google Forms to facilitate ease of data collection and reach respondents effectively.

Data analysis was performed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach with SmartPLS version 3.0. The analysis consisted of testing both the outer model (measurement model) and inner model (structural model). Convergent validity was assessed through outer loading values and Average Variance Extracted (AVE), where values above 0.70 were considered acceptable. Discriminant validity was evaluated using the Fornell-Larcker criterion, ensuring that the square root of AVE for each construct exceeded its correlations with other constructs. Internal consistency reliability was examined through Composite Reliability and Cronbach's Alpha, with acceptable thresholds set at ≥ 0.70 .

4. Results and Discussion

The analysis confirmed the validity and reliability of the measurement model. In the outer model assessment, all indicator loading values exceeded the threshold of 0.70, indicating strong positive associations between each indicator and its respective construct. Furthermore, the Average Variance Extracted (AVE) values for all constructs were above the minimum recommended value of 0.50, demonstrating acceptable convergent validity.

Discriminant validity was assessed using the Fornell-Larcker criterion, which compares the square root of the AVE of each construct to its correlations with other constructs. The results showed that for every construct, the square root of the AVE (shown on the diagonal of [Table 2](#))

was higher than its correlations with any other latent variable, confirming adequate discriminant validity.

The results of the validity and discriminant validity tests are presented in **Table 2**.

Table 2. Fornell-Larcker Criterion for Discriminant Validity

Construct	Accounting Application	Financial Performance	Financial Literacy	Marketplace Usage	Internal Perspective
Accounting Application	0.825				
Financial Performance	0.748	0.897			
Financial Literacy	0.794	0.742	0.942		
Marketplace Usage	0.762	0.869	0.648	0.940	
Internal Perspective	0.672	0.843	0.645	0.829	0.895

Note: Bolded diagonal values represent the square roots of AVE, which are higher than the corresponding inter-construct correlations.

The reliability analysis confirmed that all constructs in the model demonstrated high internal consistency. Both Composite Reliability and Cronbach's Alpha values exceeded the minimum acceptable threshold of 0.70, indicating that the constructs are reliable and suitable for further structural analysis.

Table 3. Reliability Test Results

Construct	Cronbach's Alpha	Composite Reliability
Accounting Application	0.922	0.937
Internal Perspective	0.919	0.943
Marketplace	0.974	0.979
Financial Literacy	0.956	0.968
Financial Performance	0.879	0.924

The structural model was evaluated using the R-squared (R^2) and Adjusted R-squared values to determine the explanatory power of the independent variables. The model demonstrated strong predictive power for financial performance, and moderate explanatory power for financial literacy, as shown in **Table 4**.

Table 4. R-squared and Adjusted R-squared Values

Endogenous Variable	R-squared	Adjusted R-squared
Financial Performance	0.838	0.810
Financial Literacy	0.655	0.612

The adjusted R-squared value of 0.810 for financial performance indicates that the combination of accounting applications, internal perspective, marketplace usage, and financial literacy explains 81% of the variance in financial performance, suggesting a strong model. Similarly, an adjusted R-squared of 0.612 for financial literacy reflects a moderate explanatory power, meaning that accounting applications, internal perspective, and marketplace usage collectively explain about 61% of the variance in financial literacy.

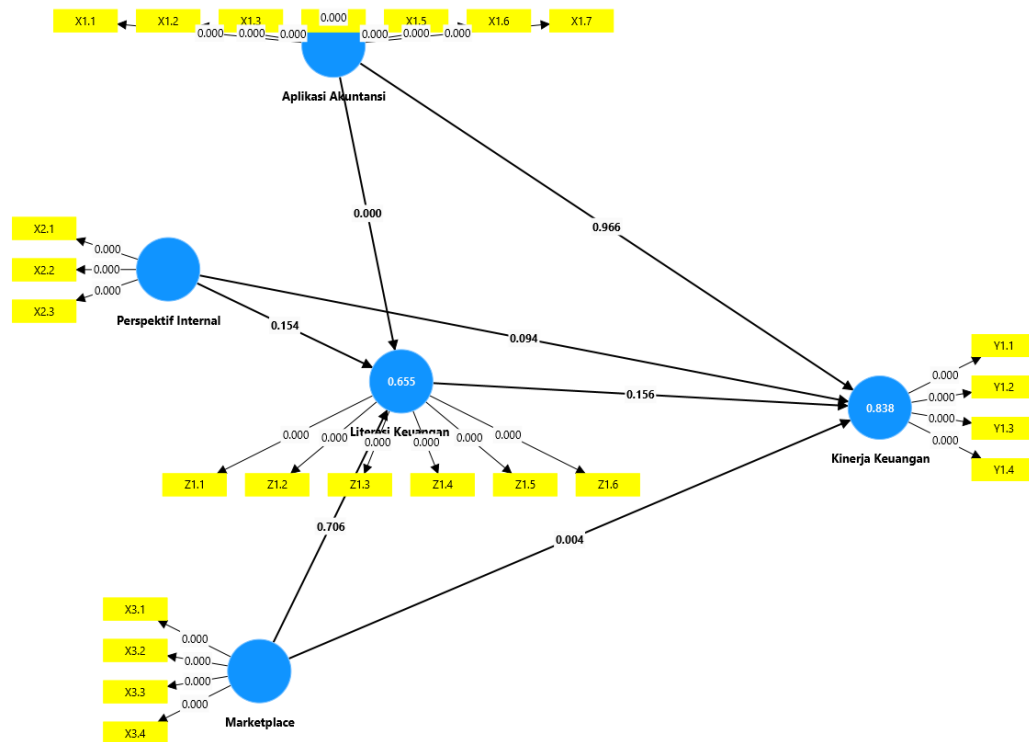


Figure 1. Results Model

Hypothesis testing was conducted using the bootstrapping procedure in PLS-SEM. The results are summarized in **Table 5**. The relationship between marketplace usage and financial performance was found to be statistically significant ($p < 0.01$). However, the direct effect of accounting applications and internal perspectives on financial performance was not statistically significant. Furthermore, financial literacy did not significantly mediate the relationship between independent variables and financial performance.

Table 5. Hypothesis Test Results

Path	Path Coefficient	T-statistics	P-value
Accounting Applications → Financial Performance	-0.010	0.043	0.966
Marketplace → Financial Performance	0.455	2.872	0.004
Internal Perspective → Financial Performance	0.306	1.673	0.094
Marketplace → Financial Literacy → Financial Performance	-0.023	0.284	0.776
Internal Perspective → Financial Literacy → Financial Performance	0.066	0.824	0.410
Accounting Application → Financial Literacy → Financial Performance	0.178	1.277	0.202

Note: Bold values indicate statistically significant relationships at $p < 0.05$.

The results presented in **Figure 1** and **Table 5** offer critical insights into the determinants of financial performance among MSMEs in 3T areas. Notably, the analysis indicates that accounting applications do not have a statistically significant direct impact on financial performance (coefficient = -0.010; T-statistic = 0.043; p-value = 0.966). While accounting software may enhance the organization and monitoring of financial data, its use alone does not guarantee improved financial outcomes. This suggests that the effectiveness of accounting technology is contingent upon complementary capabilities, particularly financial knowledge and strategic utilization.

This finding aligns with Rogers et al., who argue that accounting technologies contribute more significantly to indirect performance outcomes by improving the user's ability to interpret and act upon financial information (Rogers et al., 2014). In support of this, Endiana et al. found that although certain green accounting methods can enhance financial performance, the effect is often negligible in the absence of a broader strategic system (Endiana et al., 2020). Their study emphasizes that implementing a Corporate Sustainability Management System (CSMS) is essential for realizing measurable financial gains, and that accounting software on its own offers limited benefits unless embedded within an integrated financial strategy.

In contrast, marketplace usage was found to have a statistically significant and positive effect on financial performance (coefficient = 0.455; T-statistic = 2.872; p-value = 0.004). This underscores the pivotal role of digital platforms in expanding sales volume, improving operational efficiency, and reaching a broader customer base. The findings support digital marketing theory, particularly as elaborated by Chaffey et al., who notes that digital marketplaces help firms reduce transaction costs, increase promotional effectiveness, and scale market operations more efficiently (Chaffey et al., 2009).

Further evidence from Jung et al. supports this view by illustrating how digital markets—especially in business-to-business (B2B) settings—can transform buyer-supplier relationships and significantly enhance both operational and financial performance (Jung et al., 2011). Their research highlights the role of relational benefits, such as trust, information sharing, and collaborative innovation, in strengthening firm outcomes. These benefits are especially salient in electronic marketplaces, where firms that develop close relationships with customers and partners can generate sustainable competitive advantages.

This aligns with the Resource-Based View (RBV), which posits that unique relational assets—such as partnerships, trust-based networks, and information-sharing mechanisms—serve as valuable internal resources. By effectively managing these intangible resources through digital platforms, MSMEs can improve their financial performance while also building strategic capabilities that are difficult for competitors to imitate.

Although the analysis reveals a positive but statistically non-significant direct effect of internal perspectives on financial performance (coefficient = 0.306; T-statistic = 1.673; p-value = 0.094), this suggests that internal orientations alone are insufficient to drive measurable financial outcomes. This result indicates the need for additional interventions, such as managerial training, financial coaching, or external support mechanisms, to translate internal motivation into tangible financial gains.

Previous research has shown that internal procedures—such as accounting systems and financial management practices—are essential but not always sufficient determinants of performance. For example, Kamaruddin and Auzair found that while financial management practices enhance accountability, they do not necessarily correlate with improved financial performance (Kamaruddin & Auzair, 2023). Their study also identified internal control mechanisms as more critical than financial management routines alone in driving financial

outcomes, emphasizing the complexity of internal dynamics within business performance models.

Similarly, Ferdinandus et al., using the Balanced Scorecard approach, found that even during the COVID-19 pandemic, internal business processes had no significant effect on financial outcomes (Ferdinandus et al., 2022). Their study highlights that crisis contexts or environmental disruptions can attenuate the impact of internal processes, underscoring the limitations of relying solely on internal perspectives.

In addition, no significant indirect effects were observed through the mediating role of financial literacy—either between marketplace usage and financial performance (coefficient = -0.023; T-statistic = 0.284; p-value = 0.776) or between internal perspectives and financial performance (coefficient = 0.066; T-statistic = 0.824; p-value = 0.410). These findings suggest that financial literacy does not mediate the relationship between either construct and financial performance.

Although financial literacy is widely acknowledged as a critical competency, it may not serve as the causal mechanism linking marketplace adoption or internal orientation to improved financial outcomes. Saluja et al., for instance, found no evidence that financial literacy improved financial results among insurance users involved in digital marketplace platforms (Saluja et al., 2022). Likewise, Utkarsh et al. reported that financial literacy had limited moderating influence on the relationship between marketplace usage and financial well-being among young adults, questioning the universal role of financial literacy in shaping economic outcomes (Utkarsh et al., 2020).

The relationship between internal perspectives, financial literacy, and financial performance has attracted growing interest in the fields of strategic and financial management. However, recent studies such as Al Hakim & Jihadi (2023) and Diéguez-Soto et al. (2022) argue that financial literacy does not function as a mediating variable, i.e., it does not serve as the explanatory bridge linking internal perspectives to performance (Diéguez-Soto et al., 2022; Mughni Al Hakim et al., 2023). Instead, Tuffour et al. propose that financial literacy may act more effectively as a moderating variable—shaping the strength or direction of influence between internal capabilities and financial outcomes (Tuffour et al., 2022).

Taken together, these findings challenge the assumption that financial literacy acts as a direct causal pathway in performance models. Rather, each construct—marketplace use, internal orientation, and financial literacy—appears to operate independently, albeit interactively, in influencing MSME financial success. These dynamics underscore the need for multi-dimensional strategies that consider contextual, behavioral, and technological enablers to drive sustainable financial performance.

One plausible explanation for the absence of an indirect effect is that the internal perspective may exert a direct influence on financial performance, rendering financial literacy non-essential as a mediating variable. Firms or individuals with a strong internal orientation may already possess the intuitive decision-making abilities, contextual business knowledge, or strategic acumen needed to navigate financial challenges successfully—without necessarily undergoing formal financial literacy training (Diéguez-Soto et al., 2022). For instance, entrepreneurs with strong leadership, critical thinking, and networking capabilities may achieve financial success through experience-based learning, informal mentorship, or practical business exposure. In such cases, while financial literacy may be advantageous, it is not a prerequisite for achieving financial performance.

Another explanation could lie in the limited behavioral translation of financial knowledge into performance outcomes. Although financial literacy equips individuals with knowledge

about budgeting, investing, risk management, and financial planning, this does not guarantee optimal financial decision-making. Factors such as market volatility, cognitive biases (e.g., overconfidence), and insufficient real-world experience can hinder the effective application of financial knowledge. Businesses with a sound understanding of financial principles may still struggle if they encounter external shocks, such as economic downturns, intensified competition, or poor operational execution.

Supporting this view, Frijns et al. emphasize that practical financial experience plays a more critical role in shaping effective financial behavior than formal education or socio-economic background (Frijns et al., 2014). Their study suggests that hands-on involvement in financial decision-making fosters a deeper and more applicable form of financial literacy. This perspective contrasts with findings by Mabula and Ping, who argue that financial literacy has a significant positive influence on both financial performance and financial service utilization (Mabula & Ping, 2018). According to their results, financial knowledge facilitates better access to capital and enhances a firm's capacity to manage financial resources effectively.

These contrasting findings indicate that the role of financial literacy may be context-dependent. While it contributes meaningfully to performance in some settings—particularly where financial infrastructure is developed and support mechanisms are present—it may hold less explanatory power in environments where entrepreneurial instincts and contextual adaptation dominate business strategy. In sum, the study's findings challenge overly deterministic views of financial literacy as a universal performance driver and instead point to the need for integrating experiential learning and strategic adaptability into MSME development programs, especially in structurally disadvantaged regions.

5. Conclusion

This study presents several key findings related to the financial performance of MSMEs in 3T areas. First, while accounting applications can support financial management, they do not independently lead to improved financial performance unless accompanied by complementary factors such as financial literacy. Second, marketplace usage significantly enhances financial performance by increasing sales efficiency and expanding market reach. Third, internal perspectives—though positively associated with financial outcomes—require additional support mechanisms, such as training and external facilitation, to produce measurable effects.

Moreover, the study finds that financial literacy does not serve as a mediating variable between marketplace usage, internal perspectives, and financial performance. Instead, practical financial experience emerges as a more influential factor in improving both financial literacy and performance outcomes. This suggests that formal financial education alone may be insufficient and should be supplemented with experiential learning opportunities.

Overall, the findings underscore the importance of a holistic approach that combines digital tools, hands-on experience, and targeted support systems to enhance the financial performance of MSMEs. Policymakers and development agencies are encouraged to integrate these elements into MSME development strategies, particularly in structurally disadvantaged regions such as Indonesia's 3T areas, to foster more inclusive and sustainable economic growth.

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The authors have declared no potential conflicts of interest regarding this article's research, authorship, and/or publication.

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