STRENGTHENING MSME FINANCIAL MANAGEMENT EFFECTIVENESS THROUGH PERCEPTION OF AI AND WORKING CAPITAL MANAGEMENT

Nita Fauziah Oktaviani[1]*,Evilia Sri Yuniar[2], Rita Tri Yusnita[3]
[1]Universitas Perjuangan Tasikmalaya (Indonesia)
[2]Universitas Perjuangan Tasikmalaya (Indonesia)
[3]Universitas Perjuangan Tasikmalaya (Indonesia)
**) email: nitafauziah@unper.ac.id*

Abstract

This study investigates how AI perception and working capital management influence financial management effectiveness among MSMEs, using 440 MSME respondents in West Java, Indonesia. The analysis was conducted in two stages: first, multiple linear regression was applied to test the direct effects among variables; second, SEM-PLS was used to validate the measurement model and examine the structural relationships simultaneously. The results consistently indicate that AI perception and working capital management have positive and significant effects on financial management effectiveness, with working capital management emerging as the more dominant driver. Overall, the findings suggest that improving MSMEs' financial outcomes requires strengthening day-to-day working capital practices while also building readiness and confidence in AI enabled tools that support financial monitoring and decision making.

Keywords: Perception Of AI; Working Capital Management; Financial Management Effectiveness; Msmes

1. INTRODUCTION

Financial management effectiveness (FME) can be understood as an organization's capacity to maintain financial security and make sound financial decisions, especially under heightened risk through balanced control of liquidity and financial obligations. Evidence from Ukrainian trading enterprises during wartime operationalizes FME using an integral indicator derived from normalized financial ratios and shows that firms can maintain (or even improve) financial efficiency despite higher security spending when they preserve sufficient liquidity and keep debt burdens under control, highlighting the importance of balanced financial management for sustainability under crisis conditions (Polehenka et al., 2025). From a governance standpoint, effectiveness may also deteriorate when ownership and control are separated, because managers handling "other people's money" can generate agency costs and weaker monitoring unless appropriate incentives and control mechanisms exist (Jensen & Meckling, 1976). In MSME settings, the problem is often more fundamental: many entrepreneurs still have limited accounting literacy and rely on very simple financial practices, which constrains the effective use of accounting information in running the business (Novianti et al., 2018; Wiska et al., 2021). Accordingly, capacity

building initiatives such as training MSMEs to prepare financial statements, including smartphone based approaches remain relevant for strengthening more orderly and informed financial management practices (Yunia et al., 2020).

MSME financial management effectiveness is increasingly shaped not only by traditional financial discipline but also by whether MSMEs can leverage digital and AI-enabled support for monitoring and decision-making. AI perceptions matter because when users view AI enabled tools as useful, easy to use, and trustworthy, they are more likely to accept and intend to use them creating conditions under which AI can contribute to improved financial decision-making and management outcomes. Consistent with the Technology Acceptance Model, perceived usefulness and perceived ease of use are key determinants of technology acceptance and relate to usage, with usefulness generally showing a stronger relationship and ease of use potentially acting as an antecedent to usefulness (Davis, 1989). In a finance specific setting, a study of financial AI assistants finds that perceived anthropomorphism, performance/usefulness, and effort/ease of use significantly influence intentions toward AI-assisted financial products and services, and that trust mediates these relationships, whereas perceived security is not significant (Nguyen & Vu, 2025). From the financial management perspective, AI is described as improving forecasting and decision support via predictive analytics processing large datasets and identifying patterns with applications such as credit risk analysis, portfolio management, and fraud detection, while also facing implementation challenges and limitations (Goel et al., 2023). A systematic review similarly notes AI's contributions to efficiency, decision making, and risk management in financial management, while also recognizing that outcomes can be beneficial or harmful, underscoring the need for resilient and adaptive AI models (Firmansyah et al., 2025). Broader evidence on AI attitudes further explains adoption differences: acceptance or resistance is shaped by personal experience, self-efficacy, perceived job threats, and especially trust, while concerns such as cybersecurity threats and "blackbox" perceptions can shape evaluations, highlighting AI literacy as a basis for more informed decision-making (Brauner et al., 2023; Wang et al., 2025). Taken together, this literature supports your paper's focus on strengthening MSME financial management effectiveness through both working capital management and AI perception

Within this broader challenge of strengthening MSME financial management effectiveness, the literature repeatedly points to working capital management (WCM) as a practical and influential lever because it helps firms balance profitability, liquidity, and risk, and therefore encourages the pursuit of an optimal working capital level that supports value creation (Banos-Caballero et al., 2012; Erdogan, 2019; Vural et al., 2012). Empirical findings across emerging-market contexts show that firm outcomes are closely linked to how businesses manage core working-capital components and the cash conversion process receivables, payables, inventory, and cash, while weaknesses in collection/payment policies and cash routines remain common (Ali et

al., 2024; Aveline et al., 2014; Iyalla & Ibrahim, 2023; Muchina & Kiano, 2011). Evidence also suggests that stronger working capital efficiency is associated with profitability and lower exposure to liquidity risk, reinforcing WCM as both a financial and managerial capability, although misalignment in longer-term financial practices (e.g., capital budgeting) may still constrain SME performance in some settings (Ali et al., 2024; Sultana et al., 2024; Tahir & Anuar, 2016). This body of work therefore supports treating WCM as a foundational pathway through which MSMEs can strengthen financial management effectiveness.

2. METHODOLOGY

Research design and approach

This study employed a quantitative research design to examine the relationships among AI perception, working capital management, and MSME financial management effectiveness. The empirical analysis was conducted using PLS-SEM (SmartPLS Version 4), which is appropriate for simultaneously assessing the measurement model and the structural relationships among latent constructs.

Population And Sampling Technique

The population comprised all MSMEs in West Java, Indonesia, in 2023, totaling 7,055,660 units (Dinas Koperasi dan Usaha Kecil Jabar,2025) . The study applied purposive sampling, with the inclusion criterion that the MSME had been operating for at least five years, to ensure respondents had sufficient experience managing business finances. Sample size determination is to determine the minimum sample size, this study used the Yamane formula (Sugiyono, 2020) with a 5% margin of error. Accordingly, the minimum required sample was approximately 400 MSMEs. The final dataset used in the analysis consisted of 440 MSME respondents, exceeding the minimum requirement and strengthening statistical adequacy for PLS-SEM estimation.

3. FINDINGS AND DISCUSSION

Validity and reliability were assessed using outer loadings, AVE, and Cronbach's alpha. The results show that all indicators have outer loading values above 0,5, and loadings in the 0,5-0,6 range are still acceptable, indicating that the indicators meet the validity criteria. In addition, all constructs have AVE values above 0,5, confirming that convergent validity is achieved (Ghozali, 2021). Reliability is also supported, as

Cronbach's alpha values for all variables exceed 0.6; moreover, Hair et al. (2021) note that alpha values above 0.70 indicate that the measures are reliable and credible.

Table 1. Validity and Reliability

Variable	Code	Loading Factors	Croncbach's alpha	AVE
Perception of AI (X1)	X1.1	0,794	0,934	0.581
	X1.2	0,816		
	X1.3	0,784		
	X1.4	0,749		
	X1.5	0,774		
	X1.6	0,773		
	X1.7	0,813		
	X1.8	0,782		
	X1.9	0,760		
	X1.10	0,811		
	X1.11	0,599		
	X1.12	0,664		
Working Capital Management (X2)	X2.1	0,786	0,883	0,521
	X2.2	0,745		
	X2.3	0,706		
	X2.4	0,659		
	X2.5	0,754		
	X2.6	0,773		
	X2.7	0,727		
	X2.8	0,535		
	X2.9	0,775		
Effectiveness Financial Management (Y)	Y.1	0,623	0,849	0,527
	Y.2	0,770		
	Y.3	0,794		
	Y.4	0,802		
	Y.5	0,760		
	Y.6	0,670		
	Y.7	0,636		

A p-value analysis was subsequently conducted to evaluate the statistical significance of the effects among the variables examined in this study, as presented in the table below.

Table 2. Path Coeficient t-statistict and p-values

	Original sample (O)	T statistics (|O/STDEV|)	P values	Result
Perception of AI -> Effectiveness of Financial Management	0.234	5.758	0.000	Significant
Working Capital Management -> Effectiveness of Financial Management	0.627	18.395	0.000	Significant

Structure Model Test

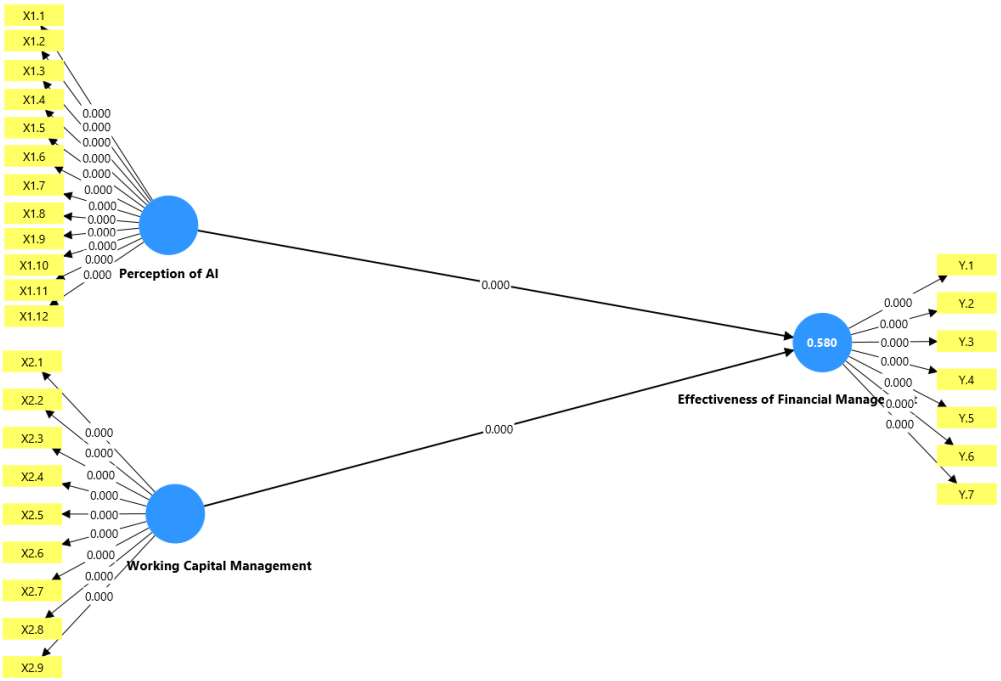

Figure 1. Structure Model Test

DISCUSSION

The Influence Of Perception Of AI To Effectiveness Of Financial Management

In the Table 2 it can be conclude that AI perception has a positive and significant effect on financial management effectiveness among MSMEs. It means, when owners and managers see AI as helpful and not difficult to use, they are more willing to engage with AI supported tools in their financial routines. This is in line with the Technology Acceptance Model, which explains that perceived usefulness and perceived ease of use are key reasons people accept and actually use a technology (Davis, 1989). Evidence from financial AI assistants also suggests that perceptions of usefulness and ease of use shape intentions to use AI assisted financial products, and that trust strengthens this process (Nguyen & Vu, 2025). As AI is often described as supporting better forecasting and decision making in financial management through predictive analytics (Goel et al., 2023), a more positive perception of AI can reasonably help MSMEs use such tools to monitor finances and make decisions more effectively.

The Influence Of Working Capital Management To Effectiveness Of Financial Management

In the Table 2 shows that working capital management has a positive and significant effect on financial management effectiveness among MSMEs. In other words, MSMEs manage their finances better when they regularly control cash, receivables, payables, and inventory, because these daily routines help them maintain

liquidity, meet payments, and keep operations stable even if the process is still done manually. This is consistent with prior studies showing that working capital decisions are closely related to firm performance and that keeping working capital at an optimal level helps balance profitability and risk (Banos Caballero et al., 2012; Erdogan, 2019; Vural et al., 2012). Evidence from emerging market settings also suggests that profitability and financial performance are sensitive to working-capital indicators, and many firms still need to improve their collection and payment practices (Iyalla & Ibrahim, 2023; Muchina & Kiano, 2011). Other studies similarly highlight that effective working capital practices support SME profitability, while some components, especially inventory management can remain weaker, which shows the need for continuous improvement (Ali et al., 2024; Aveline et al., 2014; Sultana et al., 2024; Tahir & Anuar, 2016).

4. CONCLUSION

This study concludes that AI perception and working capital management both strengthen MSME financial management effectiveness. MSMEs that view AI as useful and easy to use are more likely to engage with AI-supported tools in their financial routines, which can improve monitoring and decision-making. Likewise, stronger working capital management through better control of cash, receivables, payables, and inventory directly supports liquidity and operational stability, making financial management more effective. Overall, the findings suggest that MSME support programs should combine working-capital capability building with efforts to improve positive AI perceptions and trust, so that MSMEs can manage finances more effectively in the digital era.

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