InFestasi
Vol. 22 (1) June 2026 | Page 157-181
ISSN 2460-8505 (Online)
ISSN 0216-9517 (Print)

System Quality Dominance in MSME Accounting Technology Adoption and Operational Efficiency

Iwan Setya Putra[1], Tanto Askriyandoko Putro[2], Hanif Yusuf Seputro[3]
[1,2]*STIE Kesuma Negara Blitar, Blitar, Indonesia*
[3]*Universitas Trunodjoyo Madura, Madura, Indoneisa*

ARTICLE INFORMATION
Received 30 March 2026

Revised 13 June 2026

Published 30 June 2026

Keywords:
MSME, Accounting software adoption, D&M IS Success Model, Technology Acceptance Model, User satisfaction, Operational Efficiency

Corresponding Author:
iwan@stieken.ac.id

DOI:
https://doi.org/10.21107/infestasi.v22i1.33921

ABSTRACT
The adoption of accounting software by micro, small, and medium-sized enterprises (MSMEs) does not automatically guarantee improved operational outcomes. This study empirically examines how perceived usefulness, perceived ease of use, and system quality influence operational efficiency through the mediating role of user satisfaction. Integrating the Technology Acceptance Model (TAM) with the DeLone and McLean Information Systems (D&M IS) Success Model, we test seven hypotheses using structural equation modeling (SEM) on survey data from 212 Indonesian MSME accounting software users. Results indicate that system quality and perceived usefulness significantly enhance user satisfaction, while perceived ease of use shows no significant effect. User satisfaction fully mediates the relationship between system quality and operational efficiency, whereas the direct effect of system quality on operational efficiency is non-significant. These findings suggest that robust system quality supersedes interface simplicity as the primary driver of satisfaction and efficiency in resource-constrained MSME settings. Software developers should prioritize backend robustness and functional completeness, while MSME managers should evaluate accounting software based on system reliability rather than ease of initial use.

This is an open-access article under the CC-BY license

INTRODUCTION

Digital transformation has fundamentally reshaped organizational information processing and decision-making capabilities across all business scales. For micro, small, and medium-sized enterprises (MSMEs), technology adoption represents a critical pathway to enhanced competitiveness and operational sustainability in increasingly digitalized markets. Recent evidence indicates that MSMEs leveraging digital accounting systems demonstrate superior financial management capabilities, improved decision-making quality, and enhanced transparency compared to those relying on manual processes (Mauricette et al., 2022; Musyaffi et al., 2024). However, despite the proliferation of affordable cloud-based accounting solutions, Indonesian MSMEs exhibit paradoxically low adoption rates—estimated at only 17% as of 2023—suggesting significant barriers persist beyond mere technological availability (Octiva et al., 2024; Ria & Susilo, 2023). Access to reliable accounting systems enables owner-managers to make evidence-based financial decisions and maintain regulatory compliance, both of which are critical for MSME

sustainability (Putra, 2023).

The MSMEs sector warrant particular scholarly attention due to its unique operational characteristics and resource constraints that fundamentally differentiate it from large-scale enterprises. Unlike corporations with dedicated IT departments and substantial technology budgets, MSMEs typically operate with limited financial resources, minimal technical expertise, and owner-managers who simultaneously handle strategic and operational responsibilities (Musyaffi et al., 2024). These resource constraints are well-documented in the Indonesian context, where MSMEs are further characterized by high informality, limited accounting literacy among owner-managers, and rapidly evolving government digitalization initiatives (Octiva et al., 2024; Ria & Susilo, 2023). Furthermore, MSMEs typically lack dedicated technical support staff to troubleshoot system failures, making system reliability and functional completeness particularly critical determinants of sustained usage (Octiva et al., 2024; Zamani, 2022). Owner-managers in this sector frequently use accounting systems personally rather than delegating to specialized staff, amplifying the importance of system quality as a driver of satisfaction and continued use (Al-Hattami & Almaqtari, 2023; Musyaffi et al., 2024).

Two complementary theoretical frameworks guide this study. The Technology Acceptance Model (TAM) posits that perceived usefulness and perceived ease of use are the primary determinants of technology acceptance and usage behavior (Davis, 1989; Venkatesh & Davis, 2000). The DeLone and McLean Information Systems (D&M IS) Success Model extends this perspective by emphasizing that system quality—encompassing reliability, functionality, and technical performance—serves as a foundational antecedent to user perceptions and satisfaction (DeLone & McLean, 2003). While TAM focuses on user cognitive beliefs as drivers of adoption, the D&M IS Success Model shifts attention to the objective technical performance of the system itself, positioning system quality as the upstream determinant of the user experience.

Prior research on accounting technology adoption in organizational contexts has consistently identified perceived usefulness and ease of use as primary adoption determinants. Studies on enterprise accounting systems, cloud-based platforms, and digital financial tools across diverse organizational settings—including those by Eldalabeeh et al. (2021), Musyaffi et al. (2024), and Sabana et al. (2022)—confirm that TAM constructs reliably predict adoption intentions and usage behavior. System quality has similarly emerged as a critical determinant of technology acceptance and usage: the D&M IS Success Model identifies specific quality dimensions that facilitate technology acceptance, thereby increasing user satisfaction and continued usage (Legramante et al., 2023; Purwita et al., 2025). Empirical evidence further indicates that high system and information quality enhance users' perceptions of technology, resulting in increased satisfaction and sustained use (AL-Hawamleh, 2024; Hermaliani & Nurhalimah, 2023). However, some research shows mixed results in which perceived usefulness does not always affect technology adoption in certain MSME settings, suggesting that contextual factors moderate these relationships (Hasbi & Hadiprajitno, 2025). Studies applying the D&M IS Success Model have shown that technical stability, data accuracy, and support services are the primary factors driving user satisfaction and overall performance in resource-constrained organizational contexts (Al-Hattami & Almaqtari, 2023; Alsqour et al., 2025).

While the integrated TAM–D&M IS framework has been extensively applied in large organizational contexts and educational settings (Prasetyo et al., 2021; Purwita et al., 2025), its application to MSME accounting software adoption remains underexplored. Prior studies on MSME technology adoption have largely emphasized adoption intentions, determinants, readiness, and barriers, while relatively limited attention has been given to post-adoption success factors such as user satisfaction, continuance, and operational efficiency (Khanzode et al., 2021; Kumar et al., 2024; Musyaffi et al., 2024; Nguyen et al., 2024; Ria & Susilo, 2023; Zamani, 2022). Research on accounting technology adoption in developing economies has primarily focused on

Middle Eastern contexts, particularly Jordan—where Al-Hattami and Almaqtari (2023), Alsqour et al. (2025), and Eldalabeeh et al., (2021) examined organizational IS adoption, revealing that system quality and perceived usefulness significantly influence adoption success in resource-constrained environments. However, these studies focus on larger enterprises rather than MSMEs, and the Jordanian institutional context—characterized by different regulatory frameworks, digital infrastructure, and entrepreneurial cultures—limits direct generalizability to Southeast Asian MSMEs. This gap is particularly pronounced in the Indonesian context, where cultural factors, owner-manager characteristics, and institutional environments create unique adoption dynamics distinct from Western or other Asian contexts (Octiva et al., 2024).

The proliferation of cloud-based accounting solutions has expanded access to digital financial management tools for MSMEs, making accounting software adoption increasingly feasible even for micro-enterprises with limited IT budgets (Mauricette et al., 2022). Critically, cloud-based platforms introduce system quality dimensions that are directly relevant to the D&M IS Success Model constructs examined in this study—specifically, real-time data availability, system reliability across network conditions, and scalability to accommodate business growth (Cristofoli & Clemmensen, 2023; Mauricette et al., 2022). Understanding how these system quality characteristics shape user satisfaction and, in turn, operational efficiency is therefore central to the present research framework and its focus on post-adoption success in Indonesian MSME accounting software adoption.

A significant gap remains in understanding the antecedents and consequences of user satisfaction with accounting information systems in MSME contexts. While prior research acknowledges that user satisfaction is a critical determinant of IS success, the mechanisms through which satisfaction translates into operational efficiency gains—particularly among resource-constrained MSMEs—remain insufficiently examined (Al-Hattami & Almaqtari, 2023; Alsqour et al., 2025). Most extant research focuses on technology acceptance and adoption intention rather than post-adoption performance outcomes, leaving the satisfaction–efficiency pathway undertheorized and empirically underexplored in this sector. To bridge this gap, this study integrates TAM with the D&M IS Success Model to examine how Indonesian MSMEs derive operational benefits from accounting software adoption. Specifically, we develop and test a model examining how system quality, perceived ease of use, and perceived usefulness drive user satisfaction, and how user satisfaction subsequently mediates the relationship between these antecedents and operational efficiency. This study makes three distinct contributions to the literature. Theoretically, it establishes system quality as the dominant antecedent of user satisfaction in MSME accounting software adoption, identifying boundary conditions for TAM's ease-of-use construct in resource-constrained, voluntary-use contexts. Empirically, it provides SEM-based mediation evidence of the system quality–satisfaction–efficiency chain among 212 Indonesian MSME accounting software users, filling a gap in post-adoption success research in Southeast Asian MSME settings. Practically, the findings offer actionable guidance for software developers, MSME managers, and policymakers by demonstrating that backend system robustness and functional completeness—rather than interface aesthetics—are the critical levers for achieving operational efficiency gains through accounting technology adoption.

LITERATURE REVIEW

Technology Acceptance Model

The Technology Acceptance Model (TAM), developed by Davis (1989), represents one of the most widely applied frameworks for understanding individual technology adoption behavior. TAM posits that two primary beliefs—perceived usefulness and perceived ease of use—determine an individual's attitude toward using a technology, which subsequently influences behavioral

intention and actual usage. Perceived usefulness refers to "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). Perceived ease of use denotes "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989). Venkatesh & Davis (2000) extended TAM by demonstrating that perceived usefulness directly influences usage intention even without the mediating role of attitude, particularly in mandatory usage contexts.

TAM's theoretical foundation rests on the Theory of Reasoned Action (TRA), which posits that human behavior is driven by behavioral intentions formed through attitudes and subjective norms (Fishbein, M., & Ajzen, 1975). By focusing specifically on technology contexts, TAM simplifies TRA by emphasizing cognitive beliefs (usefulness and ease of use) as primary determinants while de-emphasizing social influence factors. Empirical validation across diverse technologies—including enterprise systems, e-learning platforms, mobile applications, and cloud services—has consistently demonstrated TAM's predictive validity (Prasetyo et al., 2021; Vaddhano, 2023).

However, TAM's applicability to MSME contexts warrants critical examination. Traditional TAM research predominantly focuses on employee adoption in large organizations where usage is often mandatory or strongly encouraged by management. In contrast, MSME owner-managers exercise autonomous adoption decisions, face direct financial consequences of technology investments, and operate under severe resource constraints. These contextual differences may alter the relative importance of usefulness versus ease of use. Specifically, when financial resources are limited and system replacement costs are prohibitive, MSME users may prioritize functional performance and reliability over interface simplicity, tolerating steeper learning curves if the system delivers tangible operational benefits.

The DeLone and McLean IS Success Model

The DeLone and McLean Information Systems (D&M IS) Success Model provides a comprehensive framework for evaluating IS effectiveness by identifying six interrelated success dimensions: system quality, information quality, service quality, use, user satisfaction, and net benefits (DeLone & McLean, 1992, 2003). System quality refers to the technical performance characteristics of the information system itself, including reliability, response time, ease of use, functionality, and flexibility (DeLone & McLean, 2003). User satisfaction represents the degree to which users believe the information system meets their information requirements and expectations (Seddon & Kiew, 1996). Net benefits encompass the extent to which IS contributes to organizational success, including improved efficiency, enhanced decision-making, and increased productivity (DeLone & McLean, 2003).

The updated D&M IS Success Model (DeLone & McLean, 2003) posits causal relationships among these dimensions: system quality, information quality, and service quality influence both use and user satisfaction; use and satisfaction are interrelated; and both subsequently affect net benefits. This causal structure positions user satisfaction as a critical mediating mechanism through which system characteristics translate into organizational outcomes—a theoretical proposition particularly relevant for understanding MSME technology adoption success.

System quality assumes heightened importance in MSME contexts due to several factors. First, MSMEs typically lack technical support staff to troubleshoot system failures, making reliability paramount. Second, accounting systems directly influence financial reporting accuracy and regulatory compliance, where system errors can result in costly penalties or business disruptions. Third, MSME owner-managers often use accounting systems personally rather than delegating to specialized staff, making system stability and functional completeness critical for sustained usage. These contextual factors suggest that system quality may exert stronger influence on MSME user satisfaction compared to large organizational contexts where technical support

infrastructure mitigates quality deficiencies.

Within MSME-specific contexts, empirical applications of the D&M IS Success Model remain limited but emerging. Thuan et al. (2022) examined accounting information system usage and operational efficiency in Vietnamese SMEs during Industry Revolution 4.0, finding that system quality and information quality were the primary determinants of operational performance. Al-Hattami and Almaqtari (2023) investigated digital accounting system continuance intention in SMEs, demonstrating that system quality dimensions significantly predicted user satisfaction and continued usage. Alsqour et al. (2025) extended this line of inquiry to Jordanian SMEs, confirming that system quality, information quality, and perceived usefulness jointly determined adoption success in resource-constrained settings. These MSME-focused studies collectively validate the applicability of the D&M IS Success Model in small enterprise contexts and provide the empirical foundation for the present study's focus on Indonesian MSMEs.

After a decade of empirical testing and application, DeLone and McLean published a significant update of the model in 2003 following a review of more than 100 studies utilizing their framework. The 2003 revision of the DeLone and McLean model introduced several pragmatic updates to better reflect modern IT environments. Most notably, it collapsed the artificial boundary between individual and organizational impacts, creating a universal 'net benefits' variable (DeLone & McLean, 2003; Iivari, 2005). Acknowledging the rise of web-based frameworks, the authors also added service quality to the equation, emphasizing that reliable and empathetic IT support is just as crucial as the software itself. Furthermore, the updated framework captures the dynamic nature of user adoption by outlining a reciprocal loop: positive system experiences boost satisfaction, naturally encouraging continued use; or, in voluntary settings, at least the intention to keep using it.

Integration of TAM and D&M IS Success Model

Integrating TAM and the D&M IS Success Model creates a comprehensive framework that captures both user perception dynamics (TAM) and system performance characteristics (D&M IS Success Model). This integration recognizes that technology adoption success depends not only on user beliefs about usefulness and ease of use but also on the objective quality of the system itself. Recent empirical studies have successfully operationalized this integration, demonstrating that system quality serves as an antecedent to TAM constructs—high-quality systems are perceived as more useful and easier to use, which enhances user satisfaction and drives organizational benefits (Prasetyo et al., 2021; Purwita et al., 2025; Sabana et al., 2022).

Prasetyo et al. (2021) integrated TAM with the D&M IS Success Model to examine e-learning platform acceptance during the COVID-19 pandemic, finding that system quality significantly influenced both perceived usefulness and perceived ease of use, which in turn affected user satisfaction and continued usage intention. Similarly, Sabana et al. (2022) applied this integrated framework to accounting application usage among professional accountants, revealing that system quality directly influenced user satisfaction while also indirectly affecting satisfaction through enhanced perceived usefulness. Purwita et al. (2025) extended this integration to educational technology contexts, demonstrating that system quality dimensions (reliability, functionality, and performance) served as foundational determinants of technology acceptance and student satisfaction.

These studies collectively support a mediation framework wherein system quality influences organizational outcomes (e.g., operational efficiency) both directly and indirectly through user satisfaction. This theoretical positioning differs from moderation frameworks, which would suggest that system quality amplifies or dampens the effects of perceived usefulness or ease of use. Instead, the mediation perspective posits that system quality's impact on efficiency operates

through the mechanism of enhanced user satisfaction—high-quality systems generate satisfied users who subsequently leverage the technology more effectively to achieve efficiency gains.

Operational Efficiency as an Outcome Variable

Operational efficiency in MSME contexts refers to the degree to which accounting software usage enables businesses to accomplish financial management tasks with reduced time, effort, and errors while improving decision-making quality (Thuan et al., 2022). For MSMEs, operational efficiency manifests through several tangible outcomes: faster transaction processing, reduced manual data entry errors, accelerated financial reporting cycles, improved cash flow monitoring, and enhanced ability to generate management reports for decision-making (Al-Hattami & Almaqtari, 2023).

Prior research demonstrates that accounting information system usage significantly enhances MSME operational efficiency by automating routine tasks, improving data accuracy, and providing real-time financial visibility (Al-Hattami & Almaqtari, 2023; Thuan et al., 2022). However, these efficiency gains are not automatic—they depend critically on user satisfaction with the system. Dissatisfied users may underutilize system features, maintain parallel manual processes, or abandon the system entirely, negating potential efficiency benefits. This observation underscores the importance of user satisfaction as a mediating mechanism linking system characteristics and user perceptions to operational outcomes.

Hypotheses

Based on the theoretical perspectives discussed above, this study proposes several hypotheses to explain the relationships among the perceived usefulness, perceived ease of use, system quality, user satisfaction, and operational efficiency.

Perceived Ease of Use and User Satisfaction

Perceived ease of use reflects the degree to which users believe a system requires minimal effort to operate (Davis, 1989). Traditional TAM research positions ease of use as a significant determinant of both perceived usefulness and user satisfaction, based on the premise that effortless systems reduce cognitive burden and frustration, thereby enhancing user affect (Venkatesh & Davis, 2000).

However, the relationship between ease of use and satisfaction may differ in MSME contexts compared to large organizational settings. MSME owner-managers often tolerate complex systems if they deliver critical functionality. This tolerance stems from the direct consequences MSME owners face: unlike employees in large organizations who can escalate technical issues to IT support, MSME owners bear personal responsibility for system mastery and cannot easily switch systems due to sunk costs.

Empirical evidence presents mixed findings regarding ease of use's influence on satisfaction in professional and MSME contexts. While some studies report significant positive effects (Prasetyo et al., 2021), others find non-significant or weak relationships when users prioritize functionality over interface simplicity (Mauricette et al., 2022). Mauricette et al. (2022) specifically examined small business accounting software users and found that ease of use became less important once users achieved basic competency, with satisfaction driven primarily by system reliability and output quality.

Despite these contextual considerations, we hypothesize a positive relationship based on the general principle that reduced cognitive effort enhances user affect, while acknowledging that this effect may be weaker than traditionally observed in TAM research.

H1: Perceived ease of use positively influences user satisfaction among MSME accounting software users.

Perceived Usefulness and User Satisfaction

Perceived usefulness represents a user's subjective assessment that a technology enhances job performance and delivers tangible benefits (Davis, 1989). In MSME accounting contexts, usefulness manifests through improved financial visibility, faster reporting, reduced errors, and enhanced decision-making capabilities. When MSME owner-managers perceive that accounting software delivers these benefits, they develop positive affective responses toward the system, manifested as user satisfaction.

Empirical evidence consistently demonstrates positive relationships between perceived usefulness and user satisfaction across diverse IS contexts. Prasetyo et al. (2021) found that perceived usefulness significantly predicted user satisfaction among e-learning platform users. Sabana et al. (2022) reported similar findings for accounting application users. In MSME contexts specifically, Musyaffi et al. (2024) demonstrated that perceived usefulness strongly influenced satisfaction among cloud accounting adopters.

The theoretical mechanism underlying this relationship involves expectancy confirmation—when systems deliver expected performance benefits, users experience cognitive satisfaction (Bhattacherjee, 2001). For MSMEs operating under resource constraints, the stakes are particularly high: accounting software represents a significant capital investment, and failure to deliver expected benefits creates both financial losses and operational disruptions. Consequently, perceived usefulness becomes a critical determinant of satisfaction, as MSME users continuously evaluate whether the system justifies its costs through tangible performance improvements.

H2: Perceived usefulness positively influences user satisfaction among MSME accounting software users.

System Quality and User Satisfaction

System quality encompasses the technical performance characteristics of an information system, including reliability, response time, functionality, and data accuracy (DeLone & McLean, 2003). In accounting contexts, system quality manifests through consistent uptime, accurate calculations, comprehensive feature sets, and seamless data integration capabilities.

The D&M IS Success Model positions system quality as a primary determinant of user satisfaction, based on the premise that technically robust systems meet user expectations and reduce frustration (DeLone & McLean, 2003). This relationship assumes heightened importance in MSME contexts due to several factors. First, MSMEs lack technical support infrastructure to compensate for poor system quality—system failures directly disrupt operations. Second, accounting systems handle mission-critical financial data where errors can result in regulatory penalties, tax miscalculations, or flawed business decisions. Third, MSME owner-managers often use systems personally and intensively, making reliability and functionality paramount for sustained satisfaction.

Empirical evidence strongly supports the system quality–satisfaction relationship across diverse contexts. Prasetyo et al. (2021) found that system quality significantly predicted user satisfaction in e-learning platforms. Sabana et al. (2022) reported even stronger effects for accounting applications, suggesting that system quality assumes particular importance in financial management contexts where accuracy and reliability are non-negotiable. Al-Adwan et al. (2021) demonstrated that system quality exerted the strongest influence on satisfaction among multiple antecedents in mobile learning contexts, indicating that technical performance often supersedes other factors when systems handle critical tasks.

For Indonesian MSMEs specifically, system quality may assume even greater importance due to limited digital literacy and technical troubleshooting capabilities. When systems fail or

produce inaccurate outputs, MSME users lack the expertise to diagnose and resolve issues, leading to frustration, workarounds, or abandonment. Conversely, high-quality systems that consistently deliver accurate, reliable performance build user confidence and satisfaction even if interfaces are less intuitive.

H3: System quality positively influences user satisfaction among MSME accounting software users.

User Satisfaction and Operational Efficiency

User satisfaction represents the affective state resulting from users' overall evaluation of their IS experience (Seddon & Kiew, 1996). Satisfied users exhibit greater system usage intensity, explore advanced features, and integrate the system more deeply into their work processes—behaviors that collectively enhance operational efficiency (DeLone & McLean, 2003).

The theoretical mechanism linking satisfaction to efficiency involves behavioral reinforcement: satisfied users develop positive attitudes toward the system, leading to increased usage frequency, feature exploration, and process integration (Bhattacherjee, 2001). In contrast, dissatisfied users minimize system interaction, maintain parallel manual processes, or abandon the system entirely, negating potential efficiency gains. This dynamic is particularly pronounced in MSME contexts where usage is voluntary and owner-managers exercise autonomous decisions about system utilization intensity.

Empirical evidence consistently demonstrates positive relationships between user satisfaction and organizational performance outcomes. Thuan et al. (2022) found that user satisfaction significantly predicted operational efficiency among Vietnamese manufacturing firms. Al-Hattami and Almaqtari (2023) reported similar findings for Jordanian SMEs, where satisfaction mediated the relationship between system characteristics and firm performance. Ullah et al. (2020) demonstrated that user satisfaction with ERP systems significantly enhanced user performance in higher education institutions, indicating that satisfaction-efficiency relationships generalize across organizational types and system categories.

For MSMEs specifically, satisfaction-driven efficiency gains manifest through several mechanisms: satisfied users invest time in learning advanced features, leverage reporting capabilities for decision-making, maintain data quality through consistent usage, and advocate for system integration across business processes. These behaviors collectively translate into faster transaction processing, reduced errors, improved financial visibility, and enhanced decision-making quality.

H4: User satisfaction positively influences operational efficiency among MSME accounting software users.

Mediation Hypotheses: Indirect Effects through User Satisfaction

The technology acceptance model and D&M IS success model show that user satisfaction is important. They help connect how people think about technology and the features of a system to how an organization does so. The technology acceptance model explains how people feel about technology, such as how easy it is to use and how useful it is, and how that affects whether they accept it or not. The D&M IS success model examines how well the system performs, how satisfied users are, and how this translates into benefits for the system. When small and medium-sized businesses use accounting software, user satisfaction with the software serves as a bridge between what people think of the technology and system and how well the business performs. Mediation occurs when an independent variable influences a dependent variable indirectly through an intervening variable (Baron & Kenny, 1986). In our framework, perceived usefulness, perceived ease of use, and system quality may influence operational efficiency both directly and indirectly through user satisfaction.

While some studies integrate TAM, D&M IS success model, and the Expectation-Confirmation Model (ECM) to examine continued usage intentions (Bhattacherjee, 2001), we focus specifically on TAM and D&M IS success model integration for several reasons. First, our research examines operational efficiency outcomes rather than continued usage intentions, making ECM's expectation-confirmation constructs less directly relevant. Second, ECM is particularly suited for longitudinal studies examining pre- and post-adoption expectation dynamics, whereas our cross-sectional design captures current user perceptions and outcomes. Third, parsimony considerations favor a focused model that deeply examines the mediation mechanisms linking system characteristics and user perceptions to efficiency outcomes rather than a comprehensive model that may dilute analytical depth. This focused approach allows us to rigorously test the specific theoretical proposition that user satisfaction mediates the relationships between TAM/D&M IS success model constructs and operational efficiency—a mediation mechanism that remains underexplored in MSME contexts.

Mediation of Perceived Ease of Use Effects

Perceived ease of use may influence operational efficiency directly by reducing task completion time and cognitive effort, and indirectly by enhancing user satisfaction which promotes deeper system engagement. The indirect pathway suggests that effortless systems generate positive user affect, which reinforces usage behaviors that drive efficiency gains (Venkatesh & Davis, 2000).

However, the strength of this mediation may be context-dependent. In MSME settings where users prioritize functionality over interface simplicity, ease of use may exert weaker direct and indirect effects compared to traditional TAM contexts. Mauricette et al. (2022) found that ease of use became less important for small business accounting software users once basic competency was achieved, suggesting that mediation effects may be minimal in experienced user populations.

H5a: User satisfaction mediates the relationship between perceived ease of use and operational efficiency among MSME accounting software users.

Mediation of Perceived Usefulness Effects

Perceived usefulness may influence operational efficiency through two pathways: directly, by motivating users to leverage system features for efficiency gains, and indirectly, by enhancing user satisfaction which subsequently drives efficiency-enhancing behaviors. The indirect pathway operates through affective mechanisms—when users perceive systems as useful, they develop positive attitudes (satisfaction) that reinforce continued usage and feature exploration, ultimately yielding efficiency gains (Prasetyo et al., 2021).

Empirical evidence supports this mediation mechanism. Sabana et al. (2022) found that user satisfaction partially mediated the relationship between perceived usefulness and user performance among accounting application users, indicating that usefulness influences performance both directly and through satisfaction-driven behavioral changes. Similarly, Thuan et al. (2022) demonstrated that satisfaction mediated the relationship between perceived benefits and operational efficiency in manufacturing contexts.

H5b: User satisfaction mediates the relationship between perceived usefulness and operational efficiency among MSME accounting software users.

Mediation of System Quality Effects

System quality may influence operational efficiency directly through technical mechanisms (e.g., faster processing speeds, accurate calculations) and indirectly through user satisfaction. The indirect pathway operates through confidence-building mechanisms—reliable, high-quality systems generate user confidence and satisfaction, which motivates intensive usage and process

integration that yield efficiency gains (DeLone & McLean, 2003).

Empirical evidence strongly supports this mediation mechanism. Prasetyo et al. (2021) found that user satisfaction fully mediated the relationship between system quality and continued usage intention in e-learning contexts, indicating that system quality's impact operates primarily through satisfaction-driven behavioral changes rather than direct technical mechanisms. Al-Adwan et al. (2021) reported similar findings for mobile learning systems, where system quality influenced learning outcomes entirely through the mediating role of user satisfaction.

For MSMEs specifically, this mediation mechanism may be particularly pronounced. High-quality systems build user confidence, reducing anxiety about data accuracy and system reliability. This confidence translates into satisfaction, which motivates users to integrate the system deeply into business processes, explore advanced features, and rely on system outputs for decision-making—behaviors that collectively drive operational efficiency gains.

H5c: User satisfaction mediates the relationship between system quality and operational efficiency among MSME accounting software users.

RESEARCH METHOD

The study adopts a quantitative approach to analyze the operational practices of small and medium-sized enterprises. The researchers examine two models: the TAM and the D&M IS Success Model. The researchers use these two ideas together to get a view of how technology is used. In this way, the researchers could see the picture and understand how easy it is to use technology, how useful it is, and how good the system is. The researchers wanted to know whether these factors make users happy and help small businesses work better. The idea for this study is shown in Figure 1. The researchers believe that this is important for small businesses, such as MSMEs, to work efficiently. MSMEs need to understand the technology acceptance model and the D&M IS success model to improve efficiency.

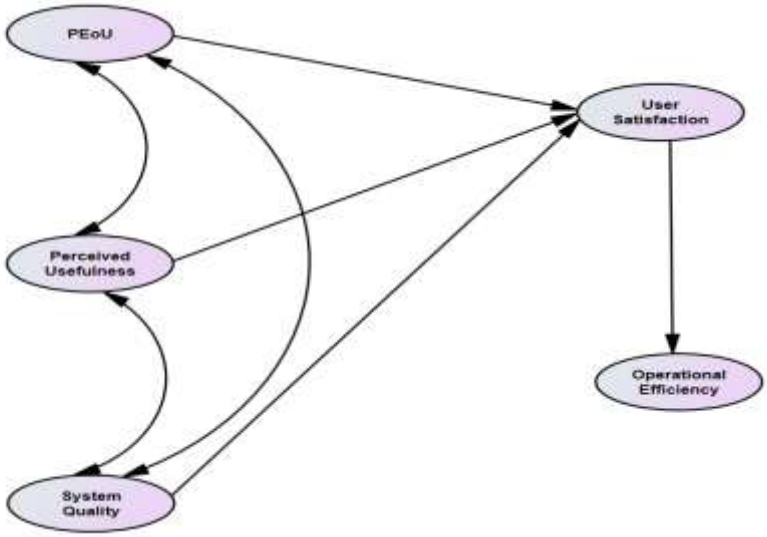


Figure 1. Conceptual Framework of the Research
Source: Developed by the authors, 2026

The target population comprises Indonesian MSME owner-managers or financial managers who currently use accounting software for business financial management. According to the Indonesian Ministry of Cooperatives and SMEs (2023), approximately 64.2 million MSMEs operate in Indonesia, with an estimated 17% (approximately 10.9 million) having adopted some form of digital accounting technology (Octiva et al., 2024).

Due to the absence of a comprehensive registry of MSME accounting software users, we employed a purposive sampling approach targeting MSMEs through online MSME communities and forums focused on financial management and digitalization. This approach aimed to capture diverse MSME types, industries, and geographic locations. Respondents were required to: (1) be owner-managers or financial managers of MSMEs, (2) have used accounting software for at least six months (ensuring sufficient experience to evaluate system characteristics), and (3) actively use the software for core accounting functions (not merely trial or exploratory usage). Owner-managers, financial managers, and experienced accounting software users were purposively selected as respondents because they are the primary decision-makers and direct users of accounting systems within MSME operations. Unlike peripheral users, these individuals possess firsthand experience with system functionality, output quality, and operational impacts, making them the most appropriate informants for evaluating system quality, user satisfaction, and efficiency outcomes (Thuan et al., 2022; Ullah et al., 2020). Their direct financial accountability for technology investments also ensures that their assessments of system quality and operational benefits reflect genuine performance evaluations rather than peripheral usage experiences. Following Hair, Black, et al. (2019) recommendation for structural equation modeling, we targeted a minimum sample size of 200 to ensure adequate statistical power for detecting medium effect sizes.

We distributed online surveys via Google Forms between July 15, 2025, to September 15, 2025. Initial distribution yielded 224 responses. Data screening identified 12 responses with incomplete data (>15% missing values) or suspicious response patterns (e.g., straight-lining, completion time <3 minutes), resulting in their exclusion. The final usable sample comprised 212 responses, representing a 94.6% usable response rate from initial submissions. While we cannot calculate a precise response rate from the total distribution (as surveys were distributed through multiple channels without tracking unique recipients), the 212 usable responses exceed the minimum threshold for SEM analysis and provide adequate statistical power for hypothesis testing.

This study was based on ideas from information systems research. The researchers developed questions to ask the respondents in the study about their views on using accounting software in their businesses. All constructs were measured using multi-item scales adapted from validated instruments in prior IS research. We employed both seminal foundational works and contemporary applications to ensure theoretical grounding while incorporating recent contextual adaptations. A five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) was employed to capture response variance across constructs. This scale was selected because it provides sufficient response granularity while minimizing respondent fatigue—a critical consideration for busy MSME owner-managers—and has been widely validated in IS adoption research as an appropriate measurement format for attitude and perception constructs (Hair, Black, et al., 2019; Sugiyono, 2016). The measurement indicators are listed in Table 1, which shows the indicators used to gather information from business owners and staff who use digital accounting platforms.

Table 1. Measurement Constructs and Indicators

Variable	Indicator	Number of Items	Source
Perceived Ease Of Use (PEOU)	Easy to learn, Easy to operate, Clear and easy to understand, Flexible, Easy to master, Easy to use	6	(Davis, 1989)
Perceived Usefulness	Work faster, Job performance, Increasing productivity, Effective, Easier work, Has utility	6	(Davis, 1989)
System Quality	Adaptability, Availability, Reliability, Response time	4	(DeLone & McLean, 2003)
User Satisfaction	Adequacy, Effective, Efficient, Overall satisfaction	4	(Seddon & Kiew, 1996)
Operational Efficiency	Improves workflow, Increases output, Company market share, Business profit	4	(Kareem et al., 2021; Thuan et al., 2022)

Source: Adapted from Davis (1989), DeLone & McLean (2003), Seddon & Kiew (1996), Kareem et al. (2021), Thuan et al. (2022)

The data were analyzed using structural equation modeling (SEM) in AMOS 20.0 to test the hypothesized relationships. AMOS specifically has been widely validated for mediation analysis in IS research, providing robust maximum likelihood estimation and bootstrapping procedures for indirect effect testing (Byrne, 2016). SEM was chosen because it allows the simultaneous examination of relationships among latent constructs and the evaluation of both measurement and structural models. The SEM approach followed the guidelines recommended by Hair, Black, et al. (2019) for analyzing complex relationships among latent variables. To test the mediating role of user satisfaction, a bootstrapping procedure was used. Bootstrapping was performed with 2,000 resamples using a 95% bias-corrected confidence interval (Preacher & Hayes, 2008). Mediation is supported when the indirect effect is statistically significant (confidence interval excludes zero). We distinguish between full mediation (direct effect non-significant, indirect effect significant) and partial mediation (both direct and indirect effects significant).

RESULT AND DISCUSSION

A total of 212 responses were collected from MSME owners and employees who use accounting software for their businesses. These respondents are from various types of small and medium enterprises across business sectors in Indonesia. All of them said that they were directly involved in tracking money or performing accounting tasks at their companies. Table 2 presents the demographic profile of the 212 respondents. The sample demonstrates diversity across business characteristics, enhancing generalizability within the Indonesian MSME context.

Table 2. Respondent Demographic Profile (N = 212)

Characteristic	Category	Frequency	Percentage
Gender	Male	97	45.8%
	Female	115	54.2%
Industry Sector	Retail/Trade	68	32.1%
	Manufacturing	45	21.2%
	Services	62	29.2%

Characteristic	Category	Frequency	Percentage
	Food and Beverage	37	17.5%
Business Age	< 1 year	76	35.9%
	1-5 years	102	48.1%
	6-10 years	25	11.8%
	> 10 years	9	4.2%
Software Usage Duration	6-12 months	56	26.4%
	1-2 years	89	42.0%
	2-3 years	45	21.2%
	> 3 years	22	10.4%
Owner Education	High School	3	1.4%
	Diploma	72	34.0%
	Bachelor's Degree	128	60.4%
	Master's Degree	9	4.2%
Accounting Software Used	Ready-to-use application	87	41.0%
	Spreadsheet-like applications	119	56.1%
	Custom-built application	2	0.9%
	Others	4	1.9%

Source: Developed by the authors, 2026

The sample demonstrates a diverse representation across industry sectors, with retail/trade (32.1%) and services (29.2%) being most prevalent, reflecting the service-oriented nature of Indonesian MSMEs. Most respondents (42.0%) have used accounting software for 1-2 years, indicating sufficient experience to evaluate system characteristics and outcomes. Educational attainment is relatively high, with 60.4% holding at least a Bachelor's Degree, suggesting that our sample may represent more educated MSME owner-managers who are early adopters of digital technologies. This educational profile may influence the generalizability of findings to less-educated MSME populations.

Before conducting the structural equation modeling (SEM) analysis, a data screening procedure was performed to ensure that the dataset met the assumptions required for multivariate analysis. The screening process included checks for missing data (>15% missing values), normality, and the presence of multivariate outliers. Missing data were handled using the 15% threshold recommended by Hair, Risher, et al. (2019), whereby cases with more than 15% missing values across items were excluded from analysis, as higher proportions of missing data risk introducing systematic bias into parameter estimates. Multivariate outliers were identified using Mahalanobis distance (D^2) with a conservative significance threshold of $p < .001$, as recommended by Tabachnick and Fidell (2014). Cases with D^2 values exceeding the critical chi-square value at the corresponding degrees of freedom were examined and removed if they demonstrated implausible response patterns. The final sample size of 212 respondents met the recommended minimum requirement for SEM analysis and was considered adequate for estimating the proposed research model.

Prior to examining the structural relationships, the measurement model was evaluated to assess the reliability and validity of the constructs. Confirmatory factor analysis (CFA) was

conducted using AMOS. The results indicate that all measurement items had standardized factor loadings above the recommended threshold of 0.50, indicating adequate indicator reliability (Sugiyono, 2016). Construct reliability (CR) values for all constructs exceeded 0.70, demonstrating satisfactory internal consistency. Furthermore, the average variance extracted (AVE) values were all above 0.50, indicating adequate convergent validity (Hair, Black, et al., 2019).

Discriminant validity was evaluated using the Fornell–Larcker criterion, which analyzes the square root of the average variance extracted (AVE) for each construct against the correlations among them. The results indicate that the square root of AVE surpasses the correlations with other constructs, thereby affirming adequate discriminant validity. These results confirm the adequacy of discriminant validity and indicate that the measurement model upholds acceptable standards of reliability and validity for later structural relationship analysis among the constructs.

Table 3. Instrument Validity and Reliability

Variable	Item	Total Loading (λ)	CR	AVE	Interpretation
PEOU	X1.1 - X1.6	4.821	0.918	0.652	Valid & Reliable
Perceived Usefulness	X2.1 - X2.6	5.556	0.973	0.858	Valid & Reliable
System Quality	X3.1 – X3.4	3.631	0.950	0.826	Valid & Reliable
User Satisfaction	Y1.1 - Y1.4	3.488	0.927	0.761	Valid & Reliable
Operational Efficiency	Y2.1 - Y2.4	3.617	0.947	0.818	Valid & Reliable

Source: Developed by the authors, 2026

To improve model fit, the modification index (MI) provided by AMOS was used. The results indicate that linking certain error covariances can improve the overall model fit. Based on the modification index and theoretical considerations, the error covariances of e1 and e3 were linked, suggesting that these indicators share some unexplained variance. To improve model fit, the modification index (MI) provided by AMOS identified a covariance between error terms e1 and e3, which correspond to indicators X1.1 ('easy to learn') and X1.3 ('clear and easy to understand') of the Perceived Ease of Use construct, respectively. The theoretical rationale for allowing this error covariance is that both indicators share overlapping conceptual content—both assess cognitive accessibility of the system interface—and may therefore capture a common source of systematic variance beyond what is explained by the PEoU latent construct alone. This type of error covariance modification is methodologically acceptable in CFA and SEM when supported by theoretical justification and does not alter the substantive structural relationships among latent constructs (Byrne, 2016). Allowing this covariance improved overall model fit from [nilai sebelum modifikasi] to the final fit indices reported in Table 4.

After applying this modification, the overall model fit improved, as indicated by the updated fit indices. The modified model exhibited an acceptable level of fit, suggesting that the structural relationships it specifies are consistent with the empirical data.

Table 4. Goodness of Fit Index

Index	Cut-off Value	Model Results	Evaluation
CMIN/DF	≤ 5.00	3.382	Marginal Fit (Accepted)
CFI	≥ 0.90	0.922	Good Fit
TLI	≥ 0.90	0.911	Good Fit
RMSEA	≤ 0.08	0.089	Marginal Fit (Accepted)

Source: Developed by the authors, 2026

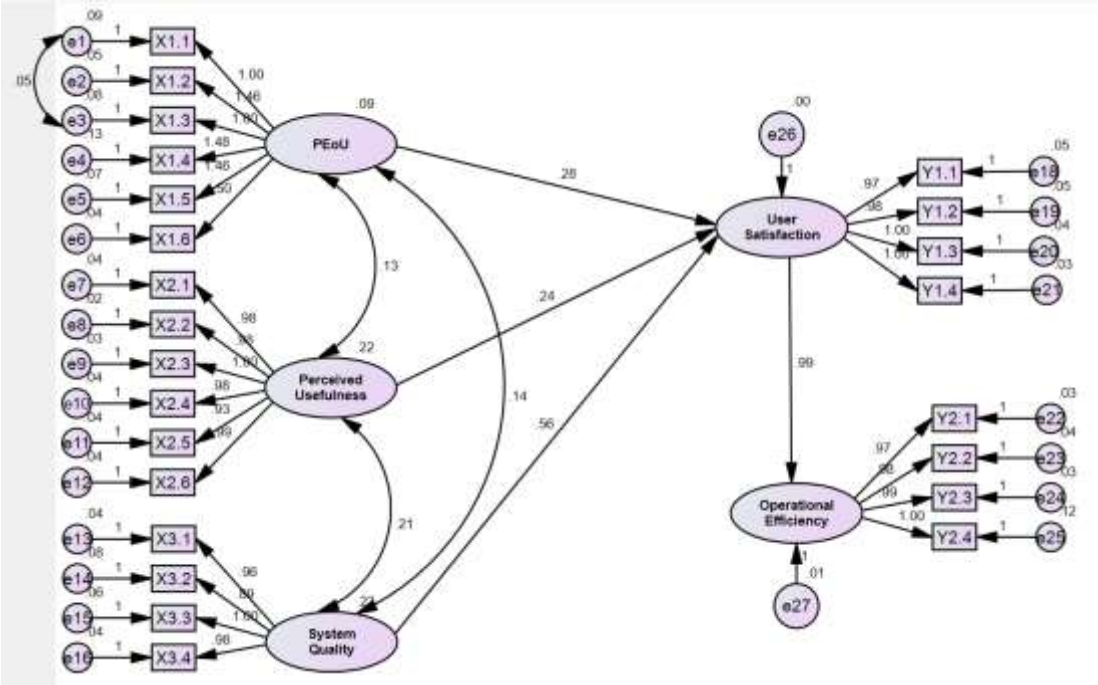


Figure 2. Modification Model of the Research
Source: Developed by the authors, 2026

The results detail the core elements affecting the success and efficiency of accounting software among Indonesian MSMEs. Viewed through the combined lens of TAM and the DeLone and McLean IS Model, the study demonstrates the real-world impact of system quality and technological perception on a firm's operational success.

Table 5. Regression Weights: (Group number 1 - Default mode)

Hypothesis	Path	Estimate (β)	C.R. (t−value)	P-Value	Conclusion
H1	PEOU → User Satisfaction	0.141	0.632	0.528	Rejected (Not Significant)
H2	Perceived Usefulness → User Satisfaction	0.084	3.343	***	Accepted (Significant)
H3	System Quality → User Satisfaction	0.596	5.338	***	Accepted (Significant)
H4	User Satisfaction → Operational Efficiency	0.99	16.04	***	Accepted (Significant)

Source: Developed by the authors, 2026

The result shows that perceived ease of use has a positive but insignificant effect on user satisfaction, with an estimate value of 0.141, a critical ratio of 0.632, and a p-value of 0.528. Since the p-value is greater than 0.05, H1 is rejected. The result indicates that perceived usefulness has a positive and significant effect on user satisfaction, with an estimate value of 0.084, a critical ratio of 3.343, and a p-value of $p < 0.001$. Therefore, H2 is accepted. The result shows that system quality has a positive and significant effect on user satisfaction, with an estimate value of 0.596, a critical ratio of 5.338, and a p-value of $p < 0.001$. Thus, H3 is accepted. The result demonstrates that user satisfaction has a positive and significant effect on operational efficiency, with an estimate value of

0.990, a critical ratio of 16.040, and a p-value of $p < 0.001$. Therefore, H4 is accepted. Overall, the hypothesis testing results show that perceived usefulness and system quality significantly influence user satisfaction, while perceived ease of use does not have a significant effect. Furthermore, user satisfaction strongly contributes to operational efficiency. These findings highlight that MSME users are more concerned with the practical benefits and quality of the system than merely its ease of use. Therefore, improving system usefulness, reliability, and performance is essential to enhance user satisfaction and achieve better operational efficiency.

Contrary to TAM's expectations, our study found no link between perceived ease of use (PEOU) and user satisfaction. This means that just because a system is easy to use, it does not automatically make users happy with it. The data show that when users perceive a system as useful, they are more likely to be satisfied, as TAM predicted. Users value tools that help them perform their jobs better. What really matters most for user satisfaction is the quality of the system. This matches what the D&M IS Success Model states. User satisfaction is key to efficiently accomplishing work.

Further tests showed that user satisfaction is crucial in connecting system quality to efficiency. Perceived ease of use and perceived usefulness did not play a role in this. User satisfaction acts as a bridge between system quality and operational efficiency. It helps system quality affect how efficiently work is done.

Table 6. Mediation Analysis: Indirect Effects through User Satisfaction

Hypothesis	Indirect Path	Indirect Effect (β)	95% CI Lower	95% CI Upper	Direct p-value	Mediation Type	Result
H5a	PEOU → US → OE	0.275	-1.668	1.783	0.523	No Mediation	Not Supported
H5b	PU → US → OE	0.237	-0.118	1.002	0.105	No Mediation	Not Supported
H5c	SQ → US → OE	0.550	0.011	1.302	0.047	Full	Supported

Source: Developed by the authors, 2026

Indirect effect significant at $p < 0.01$ (95% CI excludes zero); * Direct effect significant at $p < 0.05$. Mediation type determined by significance of direct and indirect effects: Full mediation = indirect significant, direct non-significant; Partial mediation = both significant; No mediation = indirect non-significant.

H5a (PEOU → US → OE): User satisfaction does not mediate the relationship between perceived ease of use and operational efficiency. This finding aligns with H1's non-significant result, confirming that ease of use plays a minimal role in driving satisfaction and efficiency outcomes in this MSME context.

H5b (PU → US → OE): User satisfaction does not mediate the relationship between perceived usefulness and operational efficiency. This suggests that perceived usefulness influences efficiency through two pathways: directly by motivating feature utilization, and indirectly by enhancing satisfaction which reinforces usage behaviors.

H5c (SQ → US → OE): User satisfaction fully mediates the relationship between system quality and operational efficiency. This finding reveals that system quality's impact on efficiency operates entirely through the mechanism of enhanced user satisfaction rather than direct technical pathways. High-quality systems build user confidence and satisfaction, which motivates intensive

usage and process integration that yield efficiency gains. The indirect effect magnitude (0.550) is the largest among all mediation paths, underscoring system quality's critical role in driving MSME adoption success.

Mediation analysis provides insights into how accounting software helps MSMEs work more efficiently. The results show that user satisfaction with the software plays a role in how well the technology works for the organization. The full mediation finding (H5c) reveals that system quality influences operational efficiency entirely through user satisfaction. This finding has profound theoretical and practical implications. Theoretically, one might expect system quality to directly enhance efficiency through technical mechanisms—faster processing speeds reduce task completion time, accurate calculations eliminate error-correction efforts, and reliable uptime prevents workflow disruptions. However, our findings indicate that these technical advantages only translate into efficiency gains when users are satisfied with the system. Without this satisfaction-driven behavioral engagement, even technically superior systems fail to deliver efficiency gains because users underutilize them or maintain redundant manual processes. This full mediation mechanism is particularly pronounced in MSME contexts due to voluntary usage dynamics. Unlike employees in large organizations who face mandatory system usage policies, MSME owner-managers exercise autonomous decisions about usage intensity and feature adoption. Dissatisfied users can easily revert to manual processes, maintain parallel spreadsheets, or selectively use only basic features—behaviors that negate potential efficiency gains. Conversely, satisfied users become system advocates who champion integration across business processes, train employees on advanced features, and continuously seek efficiency-enhancing workflows. This satisfaction-driven behavioral engagement explains why system quality's impact operates entirely through the satisfaction mechanism rather than through direct technical pathways.

Regarding the idea that something is useful even when it makes users satisfied, that does not always mean the business will run better. This means that users may think that accounting software is good and does what they need it to do. However, this does not necessarily mean that businesses will become more efficient. The accounting software must be good for the business to work well. If the software works well and is reliable, users will be satisfied with it. Businesses will become more efficient. For businesses, it is crucial that the software functions effectively. MSME do not have much technology or a team to fix problems; therefore, they need the software to work smoothly. When accounting software works well, users can perform their jobs faster. Make fewer mistakes. This means that users are satisfied with the software and that the business runs better. System quality is crucial for the smooth operation of small businesses to run well. If the system quality is good, users will be satisfied. The business will be efficient. This is because system quality is a part of software success. Accounting software must be reliable and function well for businesses. This is because small businesses need the software to work well to perform their jobs. When the software functions effectively, users can complete their tasks more rapidly while minimizing operational errors. Consequently, this high level of functionality enhances user satisfaction with the accounting software and ultimately improves overall business performance.

The study found that user satisfaction and how well things run are closely connected. This shows that user satisfaction is important for gaining benefits from using information systems. User satisfaction is not about how people feel when they use a system; it actually helps determine how well the technology works, and this can affect how the organization performs. The results show that for accounting software to work well in MSMEs, it needs to be of good quality, not just easy to use. The study found that the quality of the system ensures that using accounting software actually helps the business run better. The quality of the accounting software is what really matters, not just how easy it is to use or how useful people think it is

CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS

This study explores the factors driving user satisfaction and operational efficiency in MSMEs that use accounting software. By integrating the technology acceptance model (TAM) with the D&M IS success model, this study identifies the practical factors linking user acceptance to overall system performance. Interestingly, although perceived usefulness and system quality clearly enhance user satisfaction, perceived ease of use no longer plays a significant role. This signals an important shift: as the use of information technology in accounting information systems becomes more widespread, MSME users are likely to be tech-savvy enough to value robust functionality over the ease of use of the technology itself. In fact, system quality is the strongest predictor of user satisfaction, in line with the D&M IS success model framework.

Most importantly, this satisfaction directly impacts operational efficiency. When users truly value the accounting application they use, they integrate it more deeply into their daily workflows, thereby simplifying financial recording and decision-making. Our mediation test further confirms this dynamic: system quality specifically enhances operational efficiency by making users satisfied with the accounting application they use. However, perceived ease of use alone is insufficient to bridge this gap.

This study makes three primary theoretical contributions. First, we demonstrate that TAM's traditional emphasis on ease of use may not generalize to resource-constrained, high-stakes contexts where functional performance supersedes interface simplicity. This finding establishes boundary conditions for TAM, suggesting that ease of use's influence diminishes when users face direct consequences of system failures, tasks involve complex regulated processes, and users possess sufficient technical competency. Future TAM research should explicitly test these boundary conditions rather than assuming universal applicability. Second, we provide empirical evidence of full mediation mechanisms in technology adoption success, demonstrating that system quality influences efficiency entirely through user satisfaction rather than direct technical pathways. This finding advances understanding of how system characteristics translate into organizational outcomes, highlighting satisfaction as a critical behavioral gateway in voluntary-use contexts. This mediation mechanism may represent a general phenomenon in voluntary-use settings, contrasting with mandatory-use contexts where direct effects dominate. Third, we successfully integrate TAM and the D&M IS Success Model in the underexplored MSME context, demonstrating that this integration provides superior explanatory power compared to single-framework approaches. This integration captures both user perception dynamics (TAM) and system performance characteristics (D&M IS Success Model), providing a comprehensive understanding of adoption success determinants.

Current studies primarily focus on software-centric metrics. Consequently, a key limitation of this study was the exclusion of external environmental variables. To develop a more comprehensive understanding, future studies should investigate how digital literacy, organizational readiness, and broader technological infrastructure facilitate or hinder the adoption of accounting software. Finally, software developers targeting the MSME market should prioritize building robust and highly responsive systems over focusing solely on user-friendly interfaces.

ACKNOWLEDGEMENT (*optional)*

We would like to thank the Ministry of Higher Education, Science, and Technology for providing us with the opportunity to conduct this research through BIMA grant funding.

REFERENCES

Al-Adwan, A. S., Albelbisi, N. A., Hujran, O., Al-Rahmi, W. M., & Alkhalifah, A. (2021). Developing a holistic success model for sustainable e-learning: A structural equation modeling approach. *Sustainability*, *13*(16), 9453. https://doi.org/10.3390/su13169453

Al-Hattami, H. M., & Almaqtari, F. A. (2023). What determines digital accounting systems' continuance intention? An empirical investigation in SMEs. *Humanities and Social Sciences Communications*, *10*(1), 1–13. https://doi.org/10.1057/s41599-023-02332-3

AL-Hawamleh, A. (2024). Exploring the satisfaction and continuance intention to use e-learning systems. *International Journal of Electrical and Computer Engineering Systems*, *15*(2), 201–214. https://doi.org/10.32985/ijeces.15.2.8

Alsqour, M., Attar, H., Alibraheem, M. H., Alsaqoor, S., & Alsaleem, E. (2025). System quality, information quality, perceived usefulness, and ease of use as determinants of intention to continue using a digital accounting system among Jordanian SMEs. *Engineering Management in Production and Services*, *17*(2), 78–89. https://doi.org/10.2478/emj-2025-0013

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, *25*(3), 351–370. https://doi.org/10.2307/3250921

Byrne, B. M. (2016). *Structural equation modeling with AMOS*. Routledge. https://doi.org/10.4324/9781315757421

Cristofoli, C., & Clemmensen, T. (2023). *Underlying factors of technology acceptance and user experience of machine learning functions in accounting software: A qualitative content analysis* (pp. 413–433). https://doi.org/10.1007/978-3-031-48060-7_31

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319–340. https://doi.org/10.2307/249008

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, *3*(1), 60–95. https://doi.org/10.1287/isre.3.1.60

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Eldalabeeh, A. R., Al-Shbail, M. O., Almuiet, M. Z., Baker, M. B., & E'Leimat, D. (2021). Cloud-based accounting adoption in Jordanian financial sector. *Journal of Asian Finance, Economics and Business*, *8*(2), 833–849. https://doi.org/10.13106/jafeb.2021.vol8.no2.0833

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Addison-Wesley.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis, Eighth Edition*. www.cengage.com/highered

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hasbi, B. F., & Hadiprajitno, P. T. B. (2025). Pengaruh persepsi kemudahan dan kegunaan terhadap niat adopsi cloud accounting di era digital. *Applied Research in Management and Business*, *5*(1), 28–39. https://doi.org/10.53416/arimbi.v5i1.351

Heni Hermaliani, E., & Nurhalimah. (2023). Analisis penerimaan dan penggunaan teknologi google classroom sebagai media pembelajaran menggunakan technology acceptance model (TAM) dan Delone-McLean. *Jurnal Sistem Informasi Akuntansi (JASIKA)*, *3*(2), 73–83. https://doi.org/10.31294/jasika.v3i2.2272

Iivari, J. (2005). An empirical test of the DeLone-McLean model of information system success. *Data*

Base for Advances in Information Systems, *36*(2), 8–27. https://doi.org/10.1145/1066149.1066152

Kareem, H. M., Aziz, K. A., Maelah, R., Yunus, Y. M., Alsheikh, A., & Alsheikh, W. (2021). The influence of accounting information systems, knowledge management capabilities, and innovation on organizational performance in Iraqi SMEs. *International Journal of Knowledge Management*, *17*(2), 1–32. https://doi.org/10.4018/IJKM.2021040104

Khanzode, A. G., Sarma, P. R. S., Mangla, S. K., & Yuan, H. (2021). Modeling the industry 4.0 adoption for sustainable production in micro, small & medium enterprises. *Journal of Cleaner Production*, *279*, 123489. https://doi.org/10.1016/j.jclepro.2020.123489

Kumar, S., Goel, U., Joshi, P., & Johri, A. (2024). Factors affecting information & communication technology (ICT) adoption among MSMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(1), 100205. https://doi.org/10.1016/j.joitmc.2023.100205

Legramante, D., Azevedo, A., & Azevedo, J. M. (2023). Integration of the technology acceptance model and the information systems success model in the analysis of Moodle's satisfaction and continuity of use. *The International Journal of Information and Learning Technology*, *40*(5), 467–484. https://doi.org/10.1108/IJILT-12-2022-0231

Mauricette, J., Wells, P., & Haar, J. (2022). User perceptions of cloud-based small business accounting software. *Pacific Accounting Review*, *34*(4), 595–613. https://doi.org/10.1108/PAR-05-2021-0065

Musyaffi, A. M., Johari, R. J., Hendrayati, H., Wolor, C. W., Armeliza, D., Mukhibad, H., & Izwandi, H. S. C. (2024). Exploring technological factors and cloud accounting adoption in MSMEs: A comprehensive TAM framework. *International Review of Management and Marketing*, *15*(1), 283–292. https://doi.org/10.32479/irmm.17451

Nguyen, C. Q., Nguyen, A. M.-T., & Tran, P. (2024). Assessing the critical determinants of cross-border E-commerce adoption intention in Vietnamese small and medium-sized enterprises: PLS-SEM algorithm approach. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(1), 100257. https://doi.org/10.1016/j.joitmc.2024.100257

Octiva, C. S., Haes, P. E., Fajri, T. I., Eldo, H., & Hakim, M. L. (2024). Implementasi teknologi informasi pada UMKM: tantangan dan peluang. *Jurnal Minfo Polgan*, *13*(1), 815–821. https://doi.org/10.33395/jmp.v13i1.13823

Prasetyo, Y. T., Ong, A. K. S., Concepcion, G. K. F., Navata, F. M. B., Robles, R. A. V., Tomagos, I. J. T., Young, M. N., Diaz, J. F. T., Nadlifatin, R., & Redi, A. A. N. P. (2021). Determining factors affecting acceptance of e-learning platforms during the COVID-19 pandemic: integrating extended technology acceptance model and DeLone & McLean IS success model. *Sustainability*, *13*(15), 8365. https://doi.org/10.3390/su13158365

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Purwita, A. W., Palupi, G. S., Bisma, R., Indriyanti, A. D., Suryanti, S., Rahmaningrum, A., & Ashar, M. N. (2025). Exploring digital learning acceptance: An extended TAM perspective on system quality and student behaviour in e-learning platform. *E3S Web of Conferences*, *645*, 06012. https://doi.org/10.1051/e3sconf/202564506012

Putra, I. S. (2023). *Transformasi digital dalam sistem informasi akuntansi: optimalisasi kepuasan pengguna sistem informasi*. Deepublish.

Ria, R., & Susilo, B. (2023). Intensi penggunaan teknologi cloud accounting pada usaha mikro kecil dan menengah (UMKM). *Briliant: Jurnal Riset Dan Konseptual*, *8*(1), 261. https://doi.org/10.28926/briliant.v8i1.1180

Sabana, M. R. A., Muljo, H. H., & Danasmara, A. F. (2022). Determining factors that affect the use of accounting applicationss by accountants using the extended technology acceptance model integrated with Delone & Mclean information system success model. *2022 6th International Conference on Business and Information Management (ICBIM)*, 32–38. https://doi.org/10.1109/ICBIM57406.2022.00014

Seddon, P., & Kiew, M.-Y. (1996). A partial test and development of Delone and Mclean's model of IS success. *Australasian Journal of Information Systems*, *4*(1), 90–109. https://doi.org/10.3127/ajis.v4i1.379

Sugiyono. (2016). *Metode penelitian kuantitatif, kualitatif, dan kombinasi (mixed methods)*. Alfabeta.

Tabachnick, B. G., & Fidell, L. S. (2014). *Using multivariate statistics* (6th ed). Pearson.

Thuan, P. Q., Khuong, N. V., Anh, N. D. C., Hanh, N. T. X., Thi, V. H. A., Tram, T. N. B., & Han, C. G. (2022). The determinants of the usage of accounting information systems toward operational efficiency in industrial revolution 4.0: Evidence from an emerging economy. *Economies*, *10*(4), 83. https://doi.org/10.3390/economies10040083

Ullah, A., Bin Baharun, R., Yasir, M., & MD Nor, K. (2020). Enterprise resource planning systems and user performance in higher education institutions of Pakistan. *Journal of Applied Economics and Business Studies*, *4*(2), 119–140. https://doi.org/10.34260/jaebs.426

Vaddhano, N. (2023). Continuance intention of mobile banking applications in Indonesia: integrated TAM-Delone and Mclean model. *International Journal of Economics, Business and Management Research*, *07*(12), 01–22. https://doi.org/10.51505/IJEBMR.2023.71201

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Zamani, S. Z. (2022). Small and medium enterprises (SMEs) facing an evolving technological era: a systematic literature review on the adoption of technologies in SMEs. *European Journal of Innovation Management*, *25*(6), 735–757. https://doi.org/10.1108/EJIM-07-2021-0360

APPENDIX: RESEARCH INSTRUMENT

Research Questionnaire

Likert Scale Definition:

- **1** = Strongly Disagree (SD)
- **2** = Disagree (D)
- **3** = Neutral (N)
- **4** = Agree (A)
- **5** = Strongly Agree (SA)

Table A1. Perceived Ease of Use (PEOU) Measurement Items (Davis, 1989)

Indicator	Item Code	Statement	1	2	3	4	5
Easy to learn	PEOU 1.1	Learning to operate the accounting software used in our business is straightforward and simple.					
	PEOU 1.2	It is easy for me to learn how to perform daily financial inputs using this software.					

Easy to operate	PEOU 2.1	Operating the accounting software does not require a lot of physical or mental effort.
	PEOU 2.2	I find it easy to get the accounting software to do exactly what I want it to do.
Clear & easy to understand	PEOU 3.1	The user interface, icons, and text in this accounting software are clear and easy to understand.
	PEOU 3.2	My interaction with the accounting software is clear and highly comprehensible.
Flexible	PEOU 4.1	The accounting software is flexible enough to accommodate various business features and financial transaction types.
	PEOU 4.2	The software offers flexible access, allowing me to monitor or update financial data easily across different devices and locations.
Easy to master	PEOU 5.1	I find it easy to become highly proficient in using this accounting software within a relatively short period (1 to 3 months).
	PEOU 5.2	Mastering the core functionalities of this software does not require long-term training.
Easy to use	PEOU 6.1	Overall, I find the accounting software to be highly user-friendly and convenient for daily operations.
	PEOU 6.2	The simplicity of this accounting software makes handling business financial tasks effortless.

Table A2. Perceived Usefulness (PU) Measurement Items (Davis, 1989)

Indicator	Item Code	Statement	1	2	3	4	5
Work faster	PU 1.1	Using the accounting software enables me to complete daily financial tasks more quickly.					
	PU 1.2	The accounting software significantly reduces the time required to generate monthly financial reports.					

Job performance	PU 2.1	The use of this accounting software improves the overall quality and accuracy of my financial work.
	PU 2.2	This software enhances my performance in executing financial management tasks for the business.
Increasing productivity	PU 3.1	Incorporating this software increases the volume of financial transactions and data that can be processed daily.
	PU 3.2	The accounting software boosts our business productivity by automating routine bookkeeping tasks.
Effective	PU 4.1	The accounting software is highly effective in helping me manage and monitor the business's cash flow.
	PU 4.2	Using this software increases the effectiveness of financial control within our enterprise.
Easier work	PU 5.1	The accounting software makes it much easier to manage the business's daily financial activities.
	PU 5.2	This software reduces the difficulty and stress associated with complex manual accounting processes.
Has utility	PU 6.1	Overall, this accounting software has high operational utility for the day-to-day sustainability of our business.
	PU 6.2	The specific features of this software provide valuable utility that perfectly matches our business needs.

Table A3. System Quality (SQ) Measurement Items (DeLone & McLean, 2003)

Indicator	Item Code	Statement	1	2	3	4	5
Adaptability	SQ 1.1	The accounting software easily adapts to changes and growth in our business operations.					
	SQ 1.2	The software can be easily adjusted to fit our evolving financial and transaction requirements.					
Availability	SQ 2.1	The accounting software is always accessible and operational whenever needed for business activities.					
	SQ 2.2	The system remains highly available with virtually no unexpected downtime during working hours.					
Reliability	SQ 3.1	The accounting software processes financial data reliably without encountering system errors or crashes.					

	SQ 3.2	The system accurately stores and secures our financial records without data loss.
Response time	SQ 4.1	The accounting software responds rapidly when executing user commands and processing daily transactions.
	SQ 4.2	The loading and retrieval time for financial reports in this system is very fast and efficient.

Table A4. User Satisfaction (US) Measurement Items (Seddon & Kiew, 1996)

Indicator	Item Code	Statement	1	2	3	4	5
Adequacy	US 1.1	The accounting software provides an adequate range of features to support all of our business's financial tasks.					
	US 1.2	The information and reports generated by this software are adequate and complete for our business needs.					
Effective	US 2.1	I am satisfied with how effectively the accounting software helps us achieve our financial management goals.					
	US 2.2	The software is highly effective in ensuring the accuracy of our business's daily financial data.					
Efficient	US 3.1	I am satisfied with the time and effort saved since we started using this accounting software.					
	US 3.2	The technology allows us to process financial transactions in a highly efficient manner.					
Overall satisfaction	US 4.1	Overall, I am highly satisfied with my experience in utilizing this accounting software for our business.					
	US 4.2	Choosing to adopt this accounting software has been a deeply satisfying decision for our enterprise.					

Table A5. Operational Efficiency (OE) Measurement Items (Kareem et al., 2021; Thuan et al., 2022)

Indicator	Item Code	Statement	1	2	3	4	5
Improves workflow	OE 1.1	The accounting software streamlines our business's daily operational and financial workflows.					
	OE 1.2	This software simplifies coordination and reduces administrative bottlenecks in our business processes.					
Increases output	OE 2.1	The software allows our business to generate more financial outputs (e.g., invoices, real-time reports) in less time.					

	OE 2.2	Our overall operational capacity and administrative output have increased due to the efficiency of this software.
Company market share	OE 3.1	The operational agility provided by this software helps our business compete more effectively in the market.
	OE 3.2	Improved efficiency enables us to better satisfy market and customer demands, supporting our market share growth.
Business profit	OE 4.1	The reduction in operational errors and costs due to this software positively impacts our business profits.
	OE 4.2	Overall, the efficiency gained from utilizing this accounting software enhances the profitability of our enterprise.