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Implementation of Accounting Information Systems to Enhance Financial Reporting Quality, Operational Efficiency and Internal Control in MSMEs in the Digitalization Era: A Conceptual Study

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Abstract: Digitalization encourages MSMEs to improve the quality of information management and business processes, but the use of Accounting Information Systems (AIS) in MSMEs in Timor-Leste still faces limitations in technology adoption, user competency, and digital infrastructure. On the other hand, studies that specifically integrate the role of AIS on the quality of financial reports, operational efficiency, and internal control of MSMEs in Timor-Leste are still limited. This study aims to conceptually analyze the strategic role of AIS in optimizing these three aspects and formulate a conceptual framework relevant to the context of MSMEs in Timor-Leste. The study uses a conceptual literature review method by examining and synthesizing empirical research and academic literature related to AIS, accounting digitalization, financial reporting quality, operational efficiency, and internal control of MSMEs. The results of the study indicate that AIS has the potential to improve the accuracy, timeliness, and reliability of financial reports; reduce manual work and increase the efficiency of operational processes; and strengthen documentation, authorization, monitoring, and control of transactions. The novelty of this research lies in the development of an integrative perspective that positions AIS as a digital infrastructure that simultaneously supports the reporting, operational, and internal control functions of MSMEs in the context of developing countries, particularly Timor-Leste.

Keywords: Accounting Information System, Quality of Financial Reports, Operational Efficiency, Internal Control

***Abstrak:** Digitalisasi mendorong UMKM untuk meningkatkan kualitas pengelolaan informasi dan proses bisnis, namun penggunaan Sistem Informasi Akuntansi (SIA) pada UMKM di Timor-Leste masih menghadapi kendala terkait adopsi teknologi, kompetensi pengguna, dan infrastruktur digital. Di sisi lain, studi yang secara khusus mengintegrasikan peran SIA* *terhadap kualitas laporan keuangan, efisiensi operasional, dan pengendalian internal UMKM di Timor-Leste masih terbatas. Penelitian ini bertujuan untuk menganalisis secara konseptual peran strategis SIA dalam mengoptimalkan ketiga aspek tersebut serta merumuskan kerangka kerja konseptual yang relevan dengan konteks UMKM di Timor-Leste. Penelitian ini menggunakan metode tinjauan literatur konseptual dengan mengkaji dan menyintesis penelitian empiris serta literatur akademis terkait SIA, digitalisasi akuntansi, kualitas pelaporan keuangan, efisiensi operasional, dan pengendalian internal UMKM. Hasil penelitian menunjukkan bahwa SIA memiliki potensi untuk meningkatkan akurasi, ketepatan waktu, dan keandalan laporan keuangan; mengurangi pekerjaan manual serta meningkatkan efisiensi proses operasional; serta memperkuat dokumentasi, otorisasi, pemantauan, dan pengendalian transaksi. Kebaruan penelitian ini terletak pada pengembangan perspektif integratif yang menempatkan SIA sebagai infrastruktur digital yang secara simultan mendukung fungsi pelaporan, operasional, dan pengendalian internal UMKM dalam konteks negara berkembang, khususnya Timor-Leste.*

Kata Kunci: *Sistem Informasi Akuntansi, Kualitas Laporan Keuangan, Efisiensi Operasional, Pengendalian Internal*

INTRODUCTION

Digital transformation has become a global phenomenon that is fundamentally changing the way organizations manage information, execute business processes, and make strategic decisions. Within the national economic context, Micro, Small, and Medium Enterprises (MSMEs) play a crucial role as the backbone of the economy, yet they simultaneously face significant challenges related to limited financial management, operational efficiency, and weak internal controls (OECD, 2021). Digitalization, particularly through the implementation of Accounting Information Systems (AIS), is seen as a key strategy that can help MSMEs adapt and increase their competitiveness in the technology-driven economy.

Conceptually, an Accounting Information System is an integrated system designed to collect, process, store, and present financial information to support planning, control, and managerial decision-making (Romney & Steinbart, 2018). From a resource-based perspective, an AIS can be viewed as a strategic resource capable of creating competitive advantage if implemented effectively and supported by adequate organizational competencies (Grande et al., 2011; Al-Hiyari et al., 2013). In MSMEs, the existence of an AIS becomes increasingly crucial because a simple organizational structure and limited resources demand high efficiency and accuracy of information.

Several conceptual studies confirm that the implementation of AIS contributes directly to improving the quality of financial reports by presenting relevant, reliable, timely, and comparable information (Susanto, 2017; Romney & Steinbart, 2018). Good financial reporting quality not only increases transparency and accountability but also strengthens the trust of stakeholders, including creditors, investors, and the government (IASB, 2018). For MSMEs, quality financial reporting is an important basis for obtaining access to financing, developing business plans, and fulfilling regulatory obligations.

Beyond reporting, AIS also plays a strategic role in improving operational efficiency. Digital system integration enables transaction process automation, reduces recording errors, and accelerates the flow of information between business functions, thereby reducing operational costs and increasing productivity (Hall, 2016; Susanto, 2017). In the context of MSMEs, operational efficiency is a determining factor for business sustainability, given the limited capital and workforce available. Therefore, AIS functions not only as a recording tool but also as an enabler for the transformation of more efficient and adaptive business processes.

Furthermore, accounting and information systems literature emphasizes that effective AIS implementation is closely correlated with effective internal control. Computerized systems enable separation of functions, audit trails, and more systematic oversight of financial activities, thereby minimizing the risk of errors and fraud (COSO, 2017; Romney & Steinbart, 2018). For MSMEs, which generally have weak internal controls, digitization through AIS has the potential to be a solution to strengthen control mechanisms without unduly increasing organizational complexity.

Empirically, various studies over the past decade have shown that the implementation of AIS has a positive impact on the quality of MSME financial reports (Naranjo-Gil, 2016; Al-Sharif, 2020; Soudani, 2021). Other studies also confirm that the use of technology-based accounting systems contributes to increased operational efficiency and overall organizational performance (Ismail & King, 2015; Fitrios, 2016). Furthermore, research on internal control has found that an integrated AIS can improve control effectiveness and reduce the risk of fraud, particularly in small-scale organizations (Chen et al., 2019; Abu-Musa, 2020).

However, empirical findings also indicate inconsistencies in research results. Several studies report that AIS implementation has not significantly impacted the quality of financial reports or operational efficiency of MSMEs, particularly when faced with limited human resource competency, low technological readiness, and weak managerial commitment (Davis et al., 2020; Al-Okaily et al., 2022). This situation indicates that the success of AIS implementation is determined not only by technological aspects, but also by broader organizational and environmental factors.

Based on these conceptual and empirical studies, there are still research gaps that require attention. First, most studies only partially examine the influence of AIS on one aspect of MSME performance, such as financial reporting quality or operational efficiency, without considering the simultaneous relationship with internal control. Second, few studies have systematically synthesized empirical findings to provide a comprehensive picture of the role of AIS as a strategy for MSMEs in the digital era. Third, the discrepancies in research findings indicate the need to map the key factors that moderate or mediate the effectiveness of AIS implementation in MSMEs.

Therefore, this article aims to conduct a systematic literature review of research related to the implementation of Accounting Information Systems in MSMEs over the past decade. Specifically, this study aims to analyze the role of AIS in improving financial reporting quality, operational efficiency, and internal control, while also identifying research gaps and future research agendas relevant to the context of MSME digitalization.

METHOD

This study uses a conceptual literature review approach to identify, evaluate, and integrate various concepts, theoretical perspectives, and empirical findings regarding the implementation of Accounting Information Systems (AIS) in Micro, Small, and Medium Enterprises (MSMEs). This approach was chosen because the study is not directed at empirically testing the relationships between variables, but rather to gain a more comprehensive understanding of how AIS can be optimized as part of the MSME digitalization strategy, particularly in improving the quality of financial reports, operational efficiency, and internal control. A literature review can be used as a research method to synthesize various scattered research results and identify knowledge gaps that can then form the basis for developing a conceptual framework (Snyder, 2019). An integrative study approach also allows researchers to combine diverse perspectives and research results to generate new understanding of a phenomenon (Torraco, 2016).

Literature collection was conducted through a search for scientific articles relevant to the themes of Accounting Information Systems, accounting digitalization, MSMEs, financial report quality, operational efficiency, and internal control. Literature sources were prioritized from scientific journal articles published in reputable journals and can be searched through academic databases, especially Scopus, Web of Science, ScienceDirect, and Google Scholar, while still considering other relevant scientific sources. The search was conducted using a combination of keywords such as "accounting information system", "accounting digitalization", "accounting information systems in SMEs", "MSMEs financial reporting quality", "SME operational efficiency", "SMEs internal control", as well as a combination of relevant keywords in Indonesian. The selection of keywords was carried out by considering direct suitability with the focus of the study so that the literature obtained could provide a conceptual basis and empirical evidence for the research objectives.

The obtained literature was then selected based on its substantive relevance, relevance to the MSME context, theoretical or empirical contributions, and the quality of the publication sources. Priority was given to literature discussing the application of AIS or accounting digitalization in MSMEs and providing information on the quality of financial information/reports, the efficiency of business or operational processes, and internal control. Conceptual literature was used to develop theoretical definitions and perspectives, while empirical research was used to identify patterns of findings, similarities, differences, and inconsistencies in previous research results. The selection process was conducted purposively in accordance with the study's objectives, not to obtain all publications ever published on AIS and MSMEs. This is in line with Snyder (2019), who explained that the design of a literature review needs to be tailored to the research objectives, including determining topic boundaries, search strategies, relevance criteria, and the type of information to be extracted from the literature.

Literature analysis was conducted using thematic analysis and conceptual synthesis. Findings from various sources were grouped into main themes that align with the research objectives, namely (1) Accounting Information Systems in MSMEs, (2) financial report quality, (3) operational efficiency, and (4) internal control. In the next stage, the results of previous studies were compared to identify patterns of relationships, similarities and differences in findings, and conditions that could explain the emergence of inconsistent empirical results. The synthesis process was carried out not only by summarizing research results, but also by connecting related concepts and findings to obtain a more integrated understanding. This integrative approach allows the literature review to produce new conceptual knowledge by combining various perspectives previously scattered in the literature (Torraco, 2016).

Based on the synthesis results, the study further developed a conceptual framework that illustrates the strategic position of AIS in supporting the digitalization of MSMEs. This framework positions AIS as a primary mechanism that can provide benefits through three interrelated aspects: improving the quality of financial reports, increasing operational efficiency, and strengthening internal control. The conceptual framework was developed by integrating the definitions and dimensions of each concept with empirical evidence found in the literature, while also considering gaps and inconsistencies in previous research results. Therefore, the study output is not simply a summary of previous research, but rather a conceptual synthesis that can explain how AIS optimization can be part of a strategy to strengthen MSMEs in the digital era and serve as a basis for subsequent empirical research. This approach aligns with the characteristics of integrative studies, which aim to utilize existing literature to generate conceptual understanding or propositions that can guide further research (Torraco, 2016; Snyder, 2019).

RESULTS AND DISCUSSION

Results

Accounting Information System

An Accounting Information System (AIS) is a system used to collect, record, process, store, and present transaction data into accounting information that supports business management. In MSMEs, an AIS is not only concerned with recording transactions but also serves as a means of providing more structured information for reporting and decision-making. The development of digitalization has expanded the function of an AIS from manual recording to faster, more integrated, and more accessible information management (Nguyen et al., 2024; Fähndrich & Pedell, 2024).

In the context of Timor-Leste, the implementation of AIS is closely related to the development of accounting capacity and the digitalization of MSMEs. The Asian Development Bank (ADB, 2025) indicates that the digitalization of Timor-Leste's MSMEs still faces various challenges, particularly related to financial and business literacy, understanding of digital technology, connectivity, and resource limitations. These conditions indicate that the implementation of AIS in Timor-Leste's MSMEs requires not only technology, but also human resource readiness and business management capabilities. This is in line with Das Neves et al. (2025) who place technology adoption, government support, and digital training as critical factors in the digital transformation of Timor-Leste's MSMEs.

The need for accounting information is also evident in various capacity-building programs for MSMEs in Timor-Leste. Banco Central de Timor-Leste, in collaboration with IADE and the Chamber of Commerce of Timor-Leste, conducted basic accounting training covering transaction recording, preparation of profit and loss statements, balance sheets, and cash flow statements. The program demonstrated that the ability to generate and use financial information is a crucial requirement for MSMEs, including supporting access to financing. Research by Monteiro et al. (2023) also showed that financial management practices that include accounting information systems are part of the practices associated with the growth of restaurant businesses in Dili. Thus, AIS has become part of relevant business management practices in the context of MSMEs in Timor-Leste (Banco Central de Timor-Leste, n.d.; Monteiro et al., 2023).

International literature shows that AIS digitization can expand the functions of accounting information in MSME activities. Digitalization of accounting processes can help accelerate information processing, increase data availability, and support business efficiency and management (Nguyen et al., 2024; Broccardo et al., 2024). On the control side, digitalization also allows business processes to be better documented through automation and standardization, making information more easily traceable (Fähndrich & Pedell, 2024). These findings provide the basis for positioning AIS as a critical component in the digital transformation process of MSMEs, although the extent of its benefits remains dependent on the readiness of the organization and users.

Research on AIS implementation also shows that the system's benefits are not always consistent. Febriansyah and Kamisa (2023) found that AIS positively impacted the quality of MSME financial reports. However, Asmira and Sulkiah (2025) and Ramadhan et al. (2026) found that accounting digitalization, or AIS digitization, did not significantly impact financial report quality. This discrepancy indicates that the use of accounting technology does not automatically guarantee the creation of quality information. Factors such as user competence, digital literacy, organizational readiness, management support, and the quality of accounting processes can influence the success of AIS implementation (Febriansyah & Kamisa, 2023; Asmira & Sulkiah, 2025; Ramadhan et al., 2026).

Overall, the study results indicate that AIS in Timor-Leste's MSMEs can be viewed as part of the digital transformation process that supports the management of financial information and business activities. However, its implementation still faces challenges such as limited literacy, human resource capacity, digital infrastructure, and organizational readiness (ADB, 2025; Das Neves et al., 2025). Shinozaki (2026) also pointed out that digitalized MSMEs have different characteristics and performance compared to other business groups, so support for digitalization needs to be tailored to the characteristics of MSMEs. Thus, the literature indicates that AIS has strategic potential for Timor-Leste's MSMEs, but its development still requires capacity building and digital ecosystem support.

Quality of Financial Reports

The quality of financial reports indicates the report's ability to provide useful information for users in understanding a business's financial condition and performance. According to the Conceptual Framework for Financial Reporting, quality financial information must primarily be relevant and accurately represent the reported economic conditions. This quality is further reinforced by characteristics such as comparability, verifiability, timeliness, and understandability (IFRS Foundation, 2018). In the context of MSMEs, these characteristics are crucial because financial reports are used not only to determine business results but also to inform decision-making, financial management, and access to financing.

In the context of Timor-Leste, the need for quality financial reporting is evident in various capacity-building programs for MSMEs. Banco Central de Timor-Leste (BCTL), in collaboration with IADE and the Chamber of Commerce of Timor-Leste, provides training in transaction recording and the preparation of profit and loss statements, balance sheets, and cash flow statements. BCTL also explains that financial reporting is a requirement when MSMEs apply for financing from financial institutions. This situation demonstrates that the ability to produce systematic and reliable financial reports has a broader function than simply meeting administrative needs, as it is also related to MSMEs' access to financing and business management (Banco Central de Timor-Leste, n.d.).

The condition of Timor-Leste's MSMEs also shows that the quality of financial reporting is still related to limited business management capacity. ADB (2025) reported that Timor-Leste's MSMEs face limitations in access to financing, financial and business literacy, and the ability to utilize digital technology. Similarly, Jesus (2026) found that financial management practices in Timor-Leste's MSMEs include financial planning, transaction recording, budgeting, cash flow management, and financial evaluation, while limited financial literacy and financial management practices remain a problem for business sustainability. Monteiro et al.'s (2023) findings on restaurants in Dili also demonstrate the importance of financial management practices and accounting information systems in business development. Thus, the quality of Timor-Leste's MSME financial reports can be seen as part of the manager's ability to systematically produce and use financial information (ADB, 2025; Jesus, 2026; Monteiro et al., 2023).

Empirical literature on MSMEs in developing countries shows that the quality of financial reports is related to the quality of record keeping, accounting skills, information systems, and management capacity. Sularsih and Wibisono (2021) found that financial literacy and information systems technology influence the quality of MSME financial reports. Febriansyah and Kamisa (2023) also found a positive effect of AIS on the quality of MSME financial reports. Meanwhile, Arrasyidah and Syarif (2024) found that financial literacy and AIS utilization play a role in improving the quality of MSME financial reports. More recent results from Widiyastuti et al. (2025) show that understanding of accounting, AIS, and internal control systems positively and significantly influences the quality of MSME financial reports. These findings demonstrate that the quality of financial reports is determined not only by the existence of reports, but also by the quality of the processes and resources used to produce the information.

However, research on financial reporting quality has not shown a completely consistent pattern. Arifa and Alamsyah (2023) found that AIS did not have a significant direct effect on financial reporting quality, although it did influence the implementation of MSME Financial Accounting Standards (SAK) and ultimately influenced the implementation of these standards. Asmira and Sulkiah (2025) also found that accounting digitalization had no significant effect on financial reporting quality, while internal control had a positive and significant effect. Amalia et al. (2026) even showed that improving AIS quality did not automatically improve financial reporting quality. Ramadhan et al.'s (2026) findings showed a similar pattern, with AIS digitalization having a positive but insignificant effect on financial reporting quality. These differences indicate that financial reporting quality is the result of a combination of technology, accounting capabilities, reporting processes, controls, and organizational readiness, not solely the result of digital technology use.

Based on this synthesis, the quality of MSME financial reports can be understood through the report's ability to provide relevant, representative, timely, comparable, verifiable, and understandable information (IFRS Foundation, 2018). In the context of Timor-

Leste, this quality is crucial because financial reports are needed to support business management and access to financing, while MSME accounting capacity, financial literacy, and digitalization still need to be strengthened (ADB, 2025; Banco Central de Timor-Leste, n.d.). International empirical evidence suggests that AIS, financial literacy, accounting competency, internal control, and digital capabilities can contribute to report quality, but the results are not entirely consistent. Therefore, literature specifically examining the quality of MSME financial reports in Timor-Leste is still relatively limited, necessitating a conceptual synthesis linking report quality to AIS development and the digital transformation of MSMEs in the country.

Operational Efficiency

Operational efficiency is the ability of MSMEs to carry out business activities with optimal use of time, costs, labor, and resources to produce the desired output. In the context of digitalization, Accounting Information Systems (AIS) serve as information infrastructure that integrates transaction recording, data processing, information storage, and reporting for managerial needs. The use of digital systems allows for the automation of previously manual processes, thereby reducing repetitive administrative work, accelerating transaction processing, and increasing the availability of information for business managers. Literature on MSMEs indicates that digitalization is generally associated with increased operational efficiency through process simplification, resource optimization, and increased speed of decision-making (Nguyen et al., 2024; Dung et al., 2024; Hendrawan et al., 2024).

One of the main mechanisms of AIS in improving operational efficiency is the automation of accounting processes. Digitization allows for faster and more structured recording of transactions, data grouping, calculations, and the preparation of financial information. Research by Nguyen et al. (2024) on 253 MSMEs in Vietnam showed that digital transformation in accounting activities contributed to improving the quality of accounting information. This condition is crucial for efficiency because quickly available and integrated information can reduce the time required for manual data collection and processing. Similarly, Fähndrich & Pedell (2025) showed that digitalization encourages automation and standardization of management control processes in MSMEs, resulting in faster information functions and more effective business management. Thus, AIS not only functions to produce financial reports but can also reduce administrative burdens and accelerate the flow of information in operational activities.

Efficiency is also reflected in the ability of an AIS to reduce costs and operational errors. Digital systems can minimize redundant recording, reduce reliance on physical documents, and reduce the possibility of human error in transaction processing. Research on the digitization of accounting systems in MSMEs shows that the use of digital systems can improve time and cost efficiency through process automation and increased accuracy and timeliness of information (Refdi et al., 2026). Research by Anawati and Noviyanti (2026) also shows that accounting digitization has a positive and significant impact on the efficiency of financial information systems in MSMEs, particularly through faster report preparation, increased data accuracy, and reduced operational costs. These findings demonstrate that the benefits of AIS efficiency come not only from technological speed but also from the reduction of non-value-added activities in business administration processes.

In addition to time and cost efficiency, AIS digitalization can improve the efficiency of resource management and decision-making processes. Integrated information allows MSME owners or managers to obtain a faster overview of sales conditions, costs, cash flow, and resource utilization. Broccardo et al. (2024), through a study of 132 small and medium-sized enterprises in Italy, found that digitalization benefits company performance and internal and external communications and can improve the maturity of management control systems. Meanwhile, research on the digitalization of accounting processes in MSMEs shows that digitalization is not only directly related to performance but also through the organization's ability to utilize and explore information to support business processes (2026). Thus, operational efficiency can be understood not only as cost savings but also as an organization's ability to use information more quickly to allocate resources and respond to business changes.

The relationship between digitalization and operational efficiency is further strengthened by research in developing countries. Dung et al. (2024) found that digital transformation impacts the operational efficiency of MSMEs in Vietnam. Research by Bindeeba et al. (2025) shows that integrating digital business processes in MSMEs can improve efficiency by accelerating workflows, optimizing resource utilization, and reducing errors. Operational efficiency even serves as a mechanism linking digital process integration to business performance. These findings suggest that the benefits of technology are even greater when digitalization is not implemented in isolation but integrated with other business processes. Therefore, the implementation of AIS in MSMEs should ideally be directed at integrating activities, not just at digitizing transaction recording.

In the context of MSMEs in Timor-Leste, operational efficiency is becoming increasingly relevant as the digitalization process still faces limitations in resources, digital literacy, infrastructure, and technology management capabilities. Das Neves et al. (2025) found that technology adoption in Timor-Leste's MSMEs has the potential to accelerate efficiency and innovation, but these benefits require government support, infrastructure, and digital training. Monteiro et al.'s (2023) findings on restaurants in Dili also demonstrate the importance of financial management practices, including the use of accounting information systems, in supporting MSME growth. Furthermore, the Asian Development Bank (2025) indicates that digitalization remains a significant challenge for Timor-Leste's MSMEs, due to, among other factors, limited financial and business literacy, low technological awareness, and limited connectivity. Therefore, AIS has the potential to be an instrument to improve the operational efficiency of Timor-Leste's MSMEs, but its effectiveness is highly influenced by the readiness of human resources, digital infrastructure, and the ability of business owners to utilize the information generated by the system.

Overall, the literature shows that AIS and accounting digitization contribute to operational efficiency through several key mechanisms: automation of administrative work, reduction of processing time, reduction of costs and errors, integration of information, optimization of resource utilization, and acceleration of decision-making. These efficiencies can ultimately strengthen MSMEs' ability to respond to changes in the business environment and increase competitiveness. However, the literature also shows that technology does not automatically generate efficiency without the support of user competence, management support, infrastructure, and organizational readiness (Fähndrich & Pedell, 2025; Broccardo et al., 2024; Das Neves et al., 2025). Therefore, in the context of Timor-Leste, AIS should be viewed as part of the transformation of MSME business processes that connect accounting information with operational activities, not merely as a tool for generating financial reports.

Internal Control

Internal control is a set of procedures used to safeguard assets, reduce errors and fraud, ensure information reliability, and support the achievement of operational objectives. For MSMEs, internal control is crucial because resource constraints and segregation of duties can increase the risk of errors in transaction recording and financial management. Literature shows that internal controls tailored to business characteristics can help improve the reliability of accounting processes and information (Adegboyegun et al., 2020; Cheng et al., 2018; Igbojioyibo, 2024).

Internal control is also related to the quality of financial reports. Asmira & Sulkiah (2025) found that internal control has a positive and significant effect on the quality of MSME financial reports. Similar findings were demonstrated by Alfhalares and Muchtar (2024) and Widiyastuti et al. (2025), who identified internal control as a factor supporting the reliability of financial information. However, research results are not always consistent. Sularsih & Wibisono (2021), for example, found that internal control has an insignificant effect on the quality of MSME financial reports. This suggests that control effectiveness is determined not only by the existence of procedures but also by the quality of their implementation.

In addition to financial reporting quality, internal control is related to operational effectiveness and performance. Adegboyegun et al. (2020) found a positive relationship between internal control and operational efficiency in MSMEs. Cheng et al. (2018) also showed that internal control weaknesses are associated with low operational efficiency. Research on Vietnamese MSMEs by Nguyen and Nguyen (2022) even showed that implementing internal control can increase profitability by reducing inefficient practices and increasing business formality.

In the digital era, internal control is increasingly linked to Accounting Information Systems (AIS). An AIS can help provide more structured transaction recording, restrict user access, provide transaction documentation, and facilitate monitoring. Tindage et al. (2025) found that AIS implementation impacts the effectiveness of internal control in MSMEs. Other studies also show that AIS and internal control can jointly support the performance and success of MSMEs (Harini et al., 2019; Putri, 2025). Thus, AIS digitalization can be a means to strengthen control mechanisms in business activities.

In the context of Timor-Leste's MSMEs, internal control is becoming increasingly important as the digitalization process still faces limitations in financial and business literacy, technological capabilities, connectivity, and security risks. The Asian Development Bank (2025) identified these factors as challenges to the digitalization of Timor-Leste's MSMEs. Meanwhile, Monteiro et al. (2023) demonstrated the importance of financial management practices and accounting information systems for the growth of MSMEs in Dili. Based on this synthesis, internal control can be viewed as a crucial part of AIS implementation because it helps ensure that system-generated information remains accurate, secure, and usable to support MSME operational activities.

Discussion

Accounting Information Systems to Improve the Quality of Financial Reports

An Accounting Information System (AIS) can be a crucial tool in improving the quality of MSME financial reports because it helps integrate the recording, processing, storage, and presentation of financial information. The use of an AIS allows transactions to be recorded more systematically, making information more readily available, accurate, and easily traceable. Nguyen et al. (2024) found that digital transformation in accounting processes positively impacted the quality of accounting information in MSMEs in Vietnam. These findings align with Abu Afifa and Nguyen (2024) who demonstrated that AIS quality positively impacts the quality of accounting information in SMEs. Therefore, the better the system quality, the greater the opportunity for MSMEs to produce quality financial information.

The improvement in the quality of financial reports through AIS occurs primarily because the system helps reduce recording errors and speeds up transaction processing. Digitally stored information is also easier to review and reuse when needed by business owners. Putri et al. (2025) found that the use of AIS affected the quality of financial reports for MSMEs in Pelalawan Regency. Similar results were found by Romadhoni and Putri (2024), who showed that the use of an e-cashier-based accounting information system had a positive effect on the quality of financial reports for MSMEs in Central Java. Hambali and Rizqi (2025) also showed that the use of AIS is associated with increased reporting accuracy and speed of information presentation in MSMEs.

These findings indicate that AIS can improve several important characteristics of financial information, particularly accuracy, timeliness, completeness, and reliability. Michael and Widjaja (2024) found that AIS plays a role in improving the accuracy, timeliness, and completeness of financial reporting in MSME-scale retail companies. Alfhalares and Muchtar (2024) also found that AIS, together with accounting standards and internal controls, plays a role in improving the quality of MSME financial reports. Furthermore, Antoni (2025) showed that information systems, accounting competence, and compliance positively influence the quality of MSME financial reporting. These results demonstrate that the benefits of AIS will be even stronger when its use is supported by adequate accounting practices and management mechanisms.

However, AIS does not always directly produce quality financial reports. Arifa and Alamsyah (2023) found that AIS did not have a significant direct effect on financial report quality, but did so through the implementation of SAK EMKM. More recent results from Amalia et al. (2026) also showed that AIS quality did not significantly improve financial report quality, although digital accounting capabilities could improve the quality of accounting information systems. These findings suggest that technology is an enabler, not the sole determinant of financial report quality. The implementation of accounting standards, user capabilities, the quality of accounting practices, and internal controls are still necessary for the information generated by the system to be truly used as a basis for decision-making.

This view is reinforced by Hanafiah et al. (2026), who point out that digital transformation, HR competency, and AIS need to be supported by digital literacy to improve the quality of MSME financial reporting. Al-Hattami (2024) also shows that the success of AIS in SMEs is related to the effectiveness of decision-making, while Al-Hattami et al. (2024) found that system quality, information quality, system security, and other digital accounting aspects play a role in supporting governance. Thus, the success of AIS is determined not only by whether MSMEs have used technology, but also by system quality, information quality, user competence, security, and the organization's ability to utilize that information.

In the context of Timor-Leste's MSMEs, the implementation of AIS offers the potential to improve the quality of financial information, but empirical evidence directly testing this relationship is limited. Monteiro et al. (2023) showed that financial management practices, including the use of accounting information systems, are associated with the growth of MSME restaurants in Dili. However, this study did not specifically examine the effect of AIS on financial reporting quality. This situation indicates an important research area because the characteristics of Timor-Leste's MSMEs differ from those of Indonesia and Vietnam. Limitations in financial literacy, digital capabilities, and infrastructure can influence the extent to which AIS can benefit MSMEs.

Based on this synthesis, AIS can be viewed as a digital infrastructure that supports improving the quality of financial reporting, particularly through more systematic recording, faster data processing, reduced errors, and the provision of more comprehensive and timely information. However, this influence is conditional because the effectiveness of AIS depends on accounting standards, user competence, digital literacy, internal controls, and the quality of the system itself. Therefore, in the context of MSMEs in Timor-Leste, optimizing AIS is not sufficient simply by increasing technology use; it also needs to be accompanied by strengthening user capacity and financial information management practices.

Accounting Information Systems to Improve Operational Efficiency

Accounting Information Systems (AIS) not only function to produce financial information but can also be a tool to improve the operational efficiency of MSMEs. By digitizing transaction recording and processing, AIS can reduce manual work, accelerate administrative processes, and provide faster information to business managers. Msomi and Vilakazi (2023) found a positive and significant relationship between AIS use and operational efficiency of SMEs in South Africa. These results indicate that the better the accounting information system used, the greater the business's ability to manage operational activities efficiently.

These efficiencies arise primarily through automation and the reduction of repetitive tasks. Digital systems allow transactions to be recorded and processed more quickly than manual recording. Thuan et al. (2022) showed that the use of AIS positively impacts AIS effectiveness, and this effectiveness, in turn, positively impacts operational efficiency. Findings by Fähndrich and Pedell (2025) also indicate that digitalization drives automation and standardization of control processes in SMEs and increases data availability and transparency, allowing for faster analysis. Thus, AIS helps MSMEs save time while reducing non-value-added administrative activities.

AIS also supports efficiency through faster availability of information for decision-making. Information on sales, costs, inventory, and cash flow can be integrated, eliminating the need for business managers to manually collect data from multiple sources. Broccardo et al. (2024) demonstrated that digitalization improves performance and internal and external communication in SMEs and helps improve the maturity of management control systems. Similarly, Lin et al. (2024) found that timeliness, transparency, and accuracy of AIS play a significant role in improving SME performance. This demonstrates that operational efficiency extends beyond time and cost savings to the ability to quickly utilize information to determine business actions.

The effectiveness of an AIS is also related to cost reduction and more optimal resource utilization. Digitization can reduce the need for repetitive recording, the use of physical documents, and the time required to compile and review information. Refdi et al. (2026) showed that digitizing accounting systems can improve the time and cost efficiency of MSMEs through automation and improving the timeliness of information. Research on the digitization of accounting processes in SMEs also shows that digitalization can provide benefits to business performance through the utilization and exploration of information in business processes (2026). Thus, an AIS can help MSMEs allocate energy, time, and costs to more productive activities.

However, the benefits of AIS for operational efficiency are not automatic. Technology availability needs to be supported by user competence, organizational readiness, management support, and adequate resources. Thuan et al. (2022) indicate that owner/manager commitment and relative advantage are important factors in AIS adoption, while Fähndrich and Pedell (2025) identify limited digital resources, lack of managerial experience, and unclear digitalization direction as barriers. Al-Hattami et al. (2025) also identify organizational support and user satisfaction as critical factors in the success of digital accounting systems in SMEs. Therefore, AIS implementation needs to be accompanied by increased organizational competence and readiness to realize its efficiency benefits.

In the context of Timor-Leste's MSMEs, the implementation of AIS offers the potential to help address various limitations in business management. Das Neves et al. (2025) demonstrated that digital transformation in Timor-Leste's MSMEs has the potential to increase efficiency and competitiveness, although they still face challenges in terms of technology, digital skills, and necessary support. Monteiro et al.'s (2023) findings on restaurants in Dili also demonstrate the importance of financial management practices and the use of accounting information systems for MSME growth. However, research specifically examining the impact of AIS on the operational efficiency of Timor-Leste's MSMEs is still limited. Therefore, evidence from other developing countries can provide a conceptual basis, but such impact still needs to be examined taking into account the characteristics and digital readiness of Timor-Leste's MSMEs.

Based on this synthesis, AIS can be positioned as a digital instrument to improve the operational efficiency of MSMEs through process automation, time and cost savings, information integration, and accelerated decision-making. Its effectiveness remains dependent on the quality of the system and the organization's readiness to utilize it. Therefore, optimizing AIS in Timor-Leste's MSMEs involves not only technology adoption but also strengthening user competency, management support, and system integration with daily business processes.

Accounting Information Systems to Improve Internal Control

An Accounting Information System (AIS) not only serves as a transaction recording tool but can also be a crucial instrument in establishing more systematic internal controls. Through an AIS, transactions can be documented in a structured manner, information can be traced, and financial activities can be monitored more easily. Digital systems also allow for authorization and access restrictions so that not all users have the same authority over data and transactions. Thus, an AIS can help reduce the risk of recording errors, information loss, and irregularities in operational activities.

Empirical evidence shows that AIS implementation is linked to internal control effectiveness. Tindage et al. (2025), for example, specifically tested AIS implementation on internal control effectiveness in MSMEs in Sorong City with 100 respondents. The study positioned AIS as an instrument to support a more reliable financial management system and minimize the risk of errors and fraud. This finding is relevant for MSMEs because it demonstrates that digitalization of record-keeping not only produces accounting information but can also be used to strengthen internal control mechanisms.

Effective internal control is ultimately linked to a business's ability to maintain information reliability and operational efficiency. Cheng et al. (2018) found that companies with material weaknesses in internal control had lower operational efficiency than companies without such weaknesses. They also found that improvements to internal control weaknesses were followed by increases in operational efficiency. These findings strengthen the argument that internal control is not simply an administrative procedure, but rather part of a mechanism that supports the sustainability and effectiveness of an organization's operations.

In an increasingly digitalized business environment, control functions can also be strengthened through system quality, information security, and the system's ability to provide usable information to management. Al-Hattami et al. (2024) found that the effectiveness of digital accounting systems, including aspects of bookkeeping systems, system security, system quality, information quality, and service quality, is related to corporate governance. Although the study was conducted on pharmaceutical companies in Yemen and not on MSMEs in Timor-Leste, the results provide comparative evidence that the quality and security of digital accounting systems are essential in supporting governance and oversight mechanisms.

Internal control also plays a role in ensuring the reliability of the information produced by the accounting system. Krishnan et al. (2020) showed that the quality of internal control is related to the quality of financial reporting in small companies. With adequate control procedures, the recording and reporting process can be carried out more consistently, thereby reducing the opportunity for errors or information manipulation. Therefore, AIS optimization should not only focus on the speed of transaction recording but also on how the system supports the authorization, documentation, verification, and monitoring processes.

In the context of Timor-Leste, the application of AIS to strengthen internal control is increasingly relevant because the digitalization process of MSMEs still faces various limitations. Das Neves et al. (2025) showed that MSMEs in Timor-Leste still face challenges in technology adoption, so government support and digital training are needed to improve the capabilities of business actors. Meanwhile, Monteiro et al. (2023) showed that the financial management practices of MSME restaurants in Dili have included the use of accounting information systems as a component of financial management. Both findings indicate that AIS is beginning to have a place in the management of MSMEs in Timor-Leste, but its development still needs to be accompanied by improvements in competency and digital readiness.

Thus, an AIS can be viewed as an infrastructure that supports internal control through documented transaction recording, access restrictions, the provision of traceable information, and monitoring of financial activities. However, the existence of a digital system does not automatically guarantee effective internal control. Effectiveness depends on system quality, information security, user competence, authorization procedures, and discipline in using the system. For MSMEs in Timor-Leste, AIS optimization therefore needs to be directed towards a system that is simple and easy to use, while still having control mechanisms capable of supporting transparency, accountability, and ongoing business oversight.

By referring to the problem formulation, theoretical studies both empirically and conceptually, and discussions of the relationship between variables, the framework for thinking in this article is compiled as shown below.

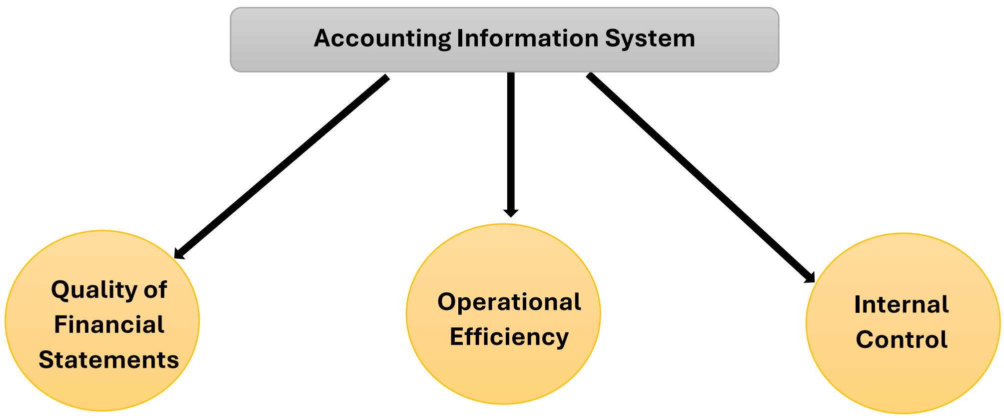

Figure 1. Conceptual Framework

CONCLUSION

Conclusion

This conceptual study demonstrates that Accounting Information Systems (AIS) play a strategic role in supporting the optimization of MSME management in the digital era. Based on the literature synthesis, AIS not only serves as a means of recording transactions but also plays a role in improving the quality of financial reports, operational efficiency, and internal control. Utilizing an integrated system allows for more accurate, timely, documented, and easily usable accounting information to serve as a basis for decision-making.

In terms of financial reporting quality, AIS can help improve the accuracy, completeness, timeliness, and reliability of financial information. In terms of operational efficiency, digitizing accounting processes can reduce manual work, speed up transaction processing, reduce administrative costs, and increase the availability of information for MSME owners or managers. Meanwhile, in terms of internal control, AIS can support access restrictions, transaction documentation, authorization, monitoring, and activity tracking, thereby helping to mitigate the risk of errors and irregularities.

However, this study also shows that the benefits of AIS are not solely determined by the availability of technology. AIS effectiveness is influenced by user competence, digital and accounting literacy, system quality, accounting standards, information security, control procedures, and organizational support and the institutional environment. In the context of Timor-Leste, these issues are increasingly important because the digitalization of

MSMEs still faces limitations in technology adoption, human resource capacity, digital infrastructure, and business ecosystem support.

Conceptually, AIS can be positioned as an infrastructure that integrates reporting, operational, and control functions in MSME management. Therefore, optimizing AIS in Timor-Leste's MSMEs needs to be directed not only at adopting accounting tools or applications, but also at developing a digital ecosystem that is appropriate to the MSME's capacity, easy to use, secure, and capable of producing relevant information for decision-making. This study also demonstrates the existence of empirical research opportunities to test the relationship model between AIS, financial reporting quality, operational efficiency, and internal control in MSMEs in Timor-Leste.

Research Limitations

This study has several limitations. First, the research used a conceptual approach, thus not collecting primary data and not conducting empirical testing of the relationships between variables. Therefore, arguments regarding the role of AIS in improving financial reporting quality, operational efficiency, and internal control need to be confirmed through field research. Second, literature specifically discussing the application of AIS to MSMEs in Timor-Leste is still relatively limited compared to other countries. Consequently, some of the arguments in this study use findings from other countries as comparative evidence. Differences in the institutional environment, level of digitalization, human resource capacity, technological infrastructure, and characteristics of MSMEs may prevent research findings from other countries from being fully generalizable to the Timor-Leste context.

Third, the development of digital technology and accounting systems is relatively rapid, so findings and approaches used in the literature may change with the emergence of new technologies. Therefore, future studies need to regularly update empirical evidence and consider developments such as cloud accounting, mobile accounting, artificial intelligence, and the integration of digital payments in MSME management.

Recommendation

Based on the study's findings, MSMEs in Timor-Leste are recommended to adopt AIS gradually, tailored to their business needs and capacity. Priority should be given not only to the use of accounting applications, but also to improving user competency, transaction recording discipline, data security, and the implementation of simple yet effective authorization and control procedures. This approach is crucial for digitalization to deliver tangible benefits to business management and not simply the use of technology.

For future research, it is recommended to conduct empirical testing on MSMEs in various regions of Timor-Leste, taking into account business size, business sector, digital literacy level, and owner or manager characteristics. Future research could also develop models that simultaneously examine the role of AIS on financial reporting quality, operational efficiency, and internal control, including examining the mediating role of user competence, digital literacy, or system quality. This way, more empirical evidence specific to the Timor-Leste context can be built to strengthen the development of MSME digitalization policies and practices.

Author Contributions

All authors contributed to the development of this article. Contributions included the formulation of the research idea and conceptualization, literature search and selection, analysis and synthesis, development of the conceptual framework, writing the initial draft, critical review, and editing the manuscript until it reached its final form. All authors have read and approved the final version of the article and are responsible for its substance and academic integrity.

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