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THE ROLE OF ACCOUNTING INFORMATION SYSTEMS IN THE DEVELOPMENT OF ERP IN INDONESIA

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Abstract

This study aims to analyse the role of accounting information systems (AIS) in the development and implementation of Enterprise Resource Planning (ERP) in Indonesia using a descriptive empirical approach. Data was obtained from industry reports, government documents, ERP company publications, and recent academic studies. The results show that AIS is a core component in the success of ERP because it supports financial data integration, reporting accuracy, and internal control. Large companies in the manufacturing, finance, and retail sectors have benefited significantly from ERP, while MSMEs and government agencies still face challenges related to digital literacy, human resource readiness, and technological infrastructure. This study concludes that ERP success depends on technological readiness, user competence, and change management strategies. These findings contribute to the digital accounting literature and have practical implications for strengthening digital transformation in Indonesia.

Keywords : *digital accounting, ERP, technological literacy, accounting information systems*

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1. Introduction

Enterprise Resource Planning (ERP) has become one of the main foundations of digital transformation in modern organizations. This system enables the comprehensive integration of various organizational processes, ranging from accounting, finance, procurement, human resources, to production and logistics. Through an integrated approach, ERP is able to reduce data duplication, improve information accuracy, and accelerate real-time decision making. In an information-based economy, the speed and accuracy of data management have become competitive factors that increasingly determine the sustainability of an organization. Therefore, research on ERP is very important, not only to understand its technological mechanisms, but also to evaluate how this system impacts the quality of organizational governance. ERP is no longer just a technological tool; it is a strategic instrument that shapes the effectiveness of internal control, risk management, and organizational accountability (Ardiansah et al., 2021).

The benefits of ERP have been proven by various international studies, which show that ERP can improve operational efficiency, reduce administrative costs, minimize recording errors, and improve coordination between units. This system also strengthens the organization's ability to conduct data-based long-term planning, develop evidence-based policies, and improve information transparency (Marsudi & Pambudi, 2021). In the Indonesian context, the need for ERP is becoming increasingly urgent in line with the demands of national digitalization, global business competition, and the need to adapt to increasingly complex financial reporting standards. Organizations in both the public and private sectors are required to improve the accuracy of financial reports, accelerate the audit process, and ensure cross-departmental data consistency, all of which can be structurally supported by ERP.

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However, ERP implementation in Indonesia has not yet yielded the consistent results expected. Studies show that many ERP projects experience delays, cost overruns, and even total failure because they are unable to integrate with existing organizational processes. The main challenge comes from the lack of organizational readiness to adapt to the new business processes required by ERP. Many institutions still rely on manual or semi-manual systems that are incompatible with the modular structure of ERP. This causes disruption to the flow of information when organizations attempt to integrate quickly without careful planning. In addition, the readiness of human resources is also an issue. Many end users do not yet have sufficient digital competence to operate ERP systems optimally, especially in government agencies, state-owned enterprises, MSMEs, and educational organizations that have not yet fully modernized their technology (Puspitawati & Dewi Anggadini, 2019).

In addition to competence issues, rigid and bureaucratic organizational structures are often obstacles to ERP implementation. Case studies show that the business process changes required by ERP often conflict with entrenched work cultures, such as long decision-making hierarchies, lack of data processing autonomy at the unit level, and resistance from employees who are comfortable with the old system (Rosdini & Ritchi, 2017). This causes many institutions to not maximize ERP features and ultimately only use the system as a regular recording tool, rather than a strategic management tool. This issue emphasizes that no matter how powerful the technology is, it will not provide benefits if it is not accompanied by readiness for managerial and organizational cultural change.

Another phenomenon is the significant difference between large and small organizations. Large companies with strong technological infrastructure, professional IT teams, and modern management cultures are better able to utilize ERP optimally. Conversely, medium and small companies often face funding constraints, infrastructure limitations, and a lack of internal experts, making ERP difficult and expensive to implement. This shows a digital readiness gap between sectors, which impacts the quality of organizational data and the overall effectiveness of business processes. In fact, ERP has great potential to drive the digital acceleration of MSMEs and public organizations, if its implementation is designed with a more adaptive approach. (Wiranti et al., 2025)

Amid these challenges, the role of accounting information systems (AIS) becomes very important. AIS is a core component of ERP, as the most frequently used and most critical ERP modules are accounting and finance modules. The quality of AIS determines the smoothness of data integration, the validity of financial reports, and the accuracy of organizational transaction records. Several studies show that organizations with strong AIS tend to be more successful in implementing ERP. A mature AIS provides a neat data structure, transaction coding standards, and stable financial report quality, making it easier for ERP to perform automation and integration.However, research findings related to the relationship between AIS and ERP are not always consistent. Several studies report that even though AIS is running well, ERP implementation still faces obstacles due to low top management support, lack of user training, and organizational resistance. Other studies even find that ERP success is more influenced by non-technical factors such as change culture, leadership commitment, and the quality of ERP consultants used. Meanwhile, other studies emphasize that the accounting module in ERP often cannot function optimally if the old AIS infrastructure is not reorganized. These differences in research results show that the relationship between AIS and ERP success is not linear, but is influenced by interacting organizational variables (Todorović & Čupić, 2023).

These differing findings create an important research gap. Most studies only discuss ERP from a technical perspective or from a management perspective separately, while few studies integrate the AIS perspective with the context of ERP implementation in Indonesia. In addition, many studies are sectoral case studies, so the findings are fragmented and difficult to generalize. Another gap is the lack of comprehensive studies that integrate various ERP determinants, ranging from accounting information system readiness, human resource readiness, management support, to organizational culture. No study has systematically

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elaborated on how AIS plays a role in all stages of ERP development, from preparation and implementation to long-term utilization.

The novelty of this study lies in its attempt to integrate empirical findings that have been scattered. By comparing studies that found a strong influence of AIS with studies that showed weak or inconsistent results, this study provides a more comprehensive understanding of the conditions that cause AIS to play a significant role in ERP development. This study also highlights intermediary variables that have been overlooked, such as organizational cultural readiness, training quality, and alignment between business processes and system design. Through this synthesis, this study not only enriches the academic discourse on AIS and ERP but also provides practical insights for organizations in Indonesia that want to improve the effectiveness of ERP implementation in the future.

2. Method

This study uses a descriptive empirical approach to analyze the role of accounting information systems (AIS) in the development and implementation of Enterprise Resource Planning (ERP) in Indonesia. This approach was chosen because it provides a factual description of the phenomenon of ERP implementation in various sectors, both private and public, based on actual data, document observation, and a review of previous studies. The descriptive method is suitable for evaluating ongoing accounting system practices and identifying supporting factors, obstacles, and strategic implications of ERP implementation in the context of national digital transformation (Sekaran & Bougie, 2020). The research data was obtained from government reports, ERP company publications, and academic documentation on the implementation of AIS and ERP in large companies, MSMEs, and public institutions in Indonesia.

The main data sources analyzed include company annual reports, ERP adoption statistics from management consulting agencies, publications from Statistics Indonesia (BPS), the Ministry of Finance, the Ministry of Industry, and technology adoption surveys by Deloitte (2022) and PwC Indonesia (2023). In addition, this study uses empirical findings from relevant international and national journals to strengthen data interpretation, particularly regarding ERP adoption, AIS readiness, accounting technology literacy, and the effectiveness of ERP use in Indonesia (Huang et al., 2021; Winarno & Putri, 2022; Puspitawati & Dewi Anggadini, 2020). The analysis was conducted qualitatively and descriptively by identifying patterns, data consistency, and key findings related to the success factors and challenges of SIA–ERP implementation.

In the analysis process, this study adopted the content analysis technique to organize empirical findings into the following main categories: (1) technological and infrastructure readiness, (2) SIA user competence and literacy, (3) business process and ERP module integration, (4) impact on accounting information quality, and (5) strategic implications of corporate financial system digitization. This technique is in line with a descriptive research approach that focuses on presenting factual and interpretive data in accordance with the organizational context (Creswell & Creswell, 2018). The results of the analysis were then synthesized to develop a framework for understanding the relationship between SIA and ERP success in the context of organizational digital maturity in Indonesia.

Using this approach, the study is expected to provide a comprehensive picture of the actual conditions of AIS implementation in ERP systems in Indonesia, as well as provide insights for researchers, practitioners, and stakeholders to understand the dynamics of accounting digitization in various economic sectors. In addition, the descriptive empirical method provides a basis for further quantitative and qualitative research on the evaluation of ERP effectiveness, digital human resource readiness, and the transformative impact of AIS in shaping modern financial management.

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3. Results and Discussion

The Concept of Accounting Information Systems and Their Integration in ERP

Accounting Information Systems (AIS) have long been recognized as the backbone of organizational information management, particularly in environments where decision-making depends heavily on the accuracy, reliability, and timeliness of financial data. Conceptually, AIS is designed to collect, record, process, and store accounting and financial information, transforming raw transactional data into structured reports that can be used by managers, auditors, regulators, and external stakeholders. As organizations move toward increasingly digital and interconnected operations, SIA evolves beyond its traditional role. It no longer serves merely as a tool for bookkeeping; rather, it functions as an integrated system that connects financial flows with operational activities at all levels of the organization. In this context, the development of Enterprise Resource Planning (ERP) represents the culmination of organizational efforts to unify, automate, and standardize their information flows (Nugraha et al., 2023).

Understanding the conceptual basis of AIS is essential for appreciating its integration within ERP systems. ERP is fundamentally a multi-modular information platform that consolidates all main business processes into a single, interconnected database. Modules such as finance, procurement, inventory management, human resources, and supply chain are tied together through standardized workflows, enabling efficient coordination and real-time information sharing. Among these modules, the financial and accounting components are universally acknowledged as the central hub because almost all organizational transactions eventually feed into the general ledger, accounts receivable, accounts payable, or fixed asset records. Consequently, the relationship between AIS and ERP is not merely hierarchical but symbiotic: AIS forms the conceptual and structural foundation upon which ERP's financial integration is built.

However, integrating AIS into ERP cannot be understood purely from a theoretical standpoint. The success or failure of this integration relies heavily on several organizational prerequisites, all of which correspond to the five focus areas highlighted by reviewers: technological and infrastructure readiness, user competence and literacy, business process integration, impact on accounting information quality, and strategic implications of financial system digitization (Halimuzzaman & Sharma, 2024).

At the technological level, the transition from standalone AIS to ERP requires robust infrastructure. Organizations must ensure that their hardware, software, and network systems are capable of supporting large volumes of real-time data. In many Indonesian organizations particularly public institutions and medium-sized enterprises, the infrastructure gap remains one of the most significant barriers. Legacy systems with outdated architectures often cannot communicate seamlessly with ERP modules, resulting in data migration failures, duplicated records, and incomplete transactional flows. These issues highlight why the theoretical compatibility between AIS and ERP must be supported by adequate infrastructure (Nguyen, 2024). Without stable networks, sufficient server capacity, standardized data formats, and secure integration layers, even the most sophisticated ERP cannot function as intended. Thus, infrastructure readiness is not merely a technical requirement; it is a foundational condition for ensuring that AIS's conceptual structure aligns with ERP's operational capabilities.

From a human resource perspective, the effectiveness of AIS–ERP integration depends greatly on the competence and literacy of system users. SIA requires users to understand fundamental accounting principles, transaction flows, and internal control structures. When these users migrate to ERP, they must adjust to more automated, standardized, and cross-departmental procedures. Organizations with high AIS literacy find it easier to adopt ERP because users are already familiar with accounting logic and data governance. Conversely, organizations where staff rely heavily on manual processes or fragmented software often experience resistance, confusion, and operational errors when ERP is introduced. This is particularly evident in modules such as automated journal entries,

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procurement as inventory finance integration, and real-time budget monitoring, all of which require users to understand both the accounting logic and the rationale behind ERP workflows (Utomo et al., 2020). Therefore, AIS user competence becomes a decisive factor that determines whether integration will enhance or hinder organizational performance.

One of the central characteristics of ERP is its demand for business process reengineering (BPR). Although ERP systems are flexible, they are built upon standardized workflows and best practices. If an organization's business processes diverge significantly from these standards, integration becomes inefficient, and ERP modules cannot function at full capacity. AIS provides a structured lens through which processes can be harmonized. Since AIS already embeds standardized procedures for data validation, authorization, and reporting, organizations that strengthen their AIS prior to ERP implementation experience fewer obstacles. In contrast, organizations with inconsistent or undocumented business processes struggle during integration, often leading to data inconsistencies, process redundancies, and unresolved cross-departmental bottlenecks. Integrating SIA into ERP, therefore, requires not only technical alignment but also organizational willingness to realign processes according to ERP's standardized logic (Salem et al., 2021).

A well-integrated AIS–ERP environment has profound implications for accounting information quality. ERP's real-time processing capabilities, combined with AIS's structured approach to financial recording, enable organizations to produce more accurate, timely, and consistent reports. Errors common in manual or semi-manual systems such as double entries, mismatched records, or delayed adjustments are reduced significantly. Furthermore, ERP enhances audit trails, strengthens internal controls, and ensures transparent data flows across departments. However, these benefits only arise when AIS's foundational principles are implemented correctly. If AIS is weak or lacking standard data definitions, inconsistent validation rules, or incomplete internal controls, ERP will amplify existing deficiencies rather than resolve them. This paradox demonstrates that ERP is not inherently capable of improving accounting information quality; it depends entirely on the integrity of the underlying AIS.

Finally, integrating SIA into ERP carries broader strategic implications. Organizations that successfully internalize ERP's digital logic gain access to advanced analytical tools, predictive financial modelling, automated control environments, and cross-functional data insights. These capabilities allow organizations to strengthen their financial governance, improve cost efficiency, support strategic planning, and enhance competitiveness in dynamic markets. In Indonesia, where many organizations still rely on conventional financial processes, ERP represents a major step toward financial system digitization (Sudarmanto et al., 2022). AIS provides the conceptual and operational foundation required for this transformation. Without strong AIS, digitalization efforts risk becoming superficial, characterized by digital interfaces but lacking true integration and analytical depth.

In sum, the concept of AIS and its integration into ERP cannot be viewed merely as a matter of aligning technologies or merging databases. It involves preparing infrastructure, strengthening user competence, standardizing business processes, ensuring high-quality accounting information, and positioning digitalization as a strategic driver of organizational transformation. The integration process is therefore multidimensional, requiring technological readiness, human capital development, organizational restructuring, and strategic vision. In Indonesia, where variations in digital maturity are wide, the conceptual understanding of AIS becomes even more crucial because it shapes the entire trajectory of ERP development. A robust AIS ensures that the theoretical ideals of ERP such as automation, integration, transparency, and real-time decision-making can be realized in practice.

The Development of ERP in Indonesia and the Strategic Role of Accounting Information Systems

The development of Enterprise Resource Planning (ERP) systems in Indonesia is closely intertwined with the country's broader digital transformation agenda. As organizations

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across private, public, and non-profit sectors attempt to modernize their operational and financial processes, ERP emerges as a crucial technological infrastructure capable of integrating diverse systems and enabling real-time information flows. However, the path toward ERP adoption in Indonesia has been uneven, influenced by disparities in technological infrastructure, varying levels of digital literacy, and differences in managerial commitment across institutions. This creates a unique landscape in which understanding the development of ERP requires examining not only the technology itself, but also the readiness and maturity of Accounting Information Systems (AIS) that support it.

(Widjaja & Matitaputty, 2018). Over time, its adoption expanded to government institutions, educational organizations, and medium-sized enterprises. Despite the increasing interest, there remain significant obstacles that inhibit full ERP implementation. Many of these challenges stem from the foundational systems upon which ERP relies, particularly SIA. As the central module within ERP, the accounting and financial components require a level of conceptual coherence, data quality, and procedural standardization that is not always present in Indonesian organizations (Wiranti et al., 2025). This positions SIA as a strategic filter through which the development and success of ERP must be interpreted.

One of the primary determinants of ERP development in Indonesia is technological readiness. While major corporations tend to possess sophisticated infrastructure, high-capacity servers, secure local networks, and cloud-based services, many small and medium-sized enterprises (SMEs) as well as local government institutions still rely on fragmented and outdated systems. The presence of legacy applications that cannot communicate with modern platforms often complicates ERP integration. Furthermore, inconsistent internet quality across different regions in Indonesia affects the stability of cloud-based ERP systems, which are increasingly becoming the standard.

SIA plays a decisive role in this context because organizations with modernized AIS typically have better technological readiness. AIS requires structured data architectures, standardized chart of accounts, and clear documentation of financial processes. These conditions form the technical backbone upon which ERP modules operate. Conversely, when SIA still relies on manual spreadsheets or stand-alone programs, ERP implementation becomes a high-risk endeavor. In other words, ERP cannot function as an integrated digital platform without a foundational SIA that ensures data uniformity, validation rules, and strong internal controls. This explains why technological readiness is never separate from AIS readiness, both are intrinsically linked.The success of ERP development depends not only on technological infrastructure but also on the human capital behind it. ERP introduces standardized workflows, automated journal entries, integrated procurement finance cycles, and real-time reporting. These capabilities require users who possess strong AIS literacy, including an understanding of accounting principles, system navigation, data validation, and financial reporting logic.

In Indonesia, the variation in user competence is substantial. Large firms and multinational corporations usually have employees with prior exposure to digital systems. Meanwhile, users in government offices, regional institutions, and smaller enterprises often struggle to adapt to ERP's structured workflows (Frisdianalis Tihta & Fityan Izza Noor, 2025). Training programs are frequently insufficient, and many users revert to manual processes outside the system, a phenomenon widely observed and known as shadow practices. This undermines the very purpose of ERP integration.

SIA serves a strategic bridging function in this regard. When SIA is well-established which is supported by clear procedures, user guides, and standardized data entry rules, employees are better prepared to transition into ERP systems. Additionally, SIA provides an educational foundation that familiarizes users with key accounting flows such as procurement-to-payment (P2P), order-to-cash (O2C), and record-to-report (R2R), which form the backbone of ERP modules. Thus, investing in AIS user competence accelerates ERP development and minimizes operational resistance.

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ERP implementation in Indonesia frequently encounters obstacles because organizational business processes are not aligned with ERP's standard configuration. ERP is designed around standardized best practices that assume a certain level of process maturity. Meanwhile, many Indonesian organizations particularly government agencies, operate on manual or semi-manual workflows, often characterized by duplicated responsibilities, unclear authorizations, and inconsistent data formats.

The existence of mature SIA helps organizations bridge this gap. Since AIS already requires clearly defined procedures for transaction recording, validation, and approval, organizations with strong SIA foundations have greater alignment with ERP workflows. For example, AIS's requirement for standardized documentation aligns with ERP's demand for digitized invoices and purchase orders. Similarly, SIA's built-in internal control mechanisms integrate smoothly with ERP's automated approval hierarchies.

However, when business processes have not been mapped or standardized, ERP integration becomes problematic. Transactions may not be captured correctly, cross module data misalignments occur, and financial reports become unreliable. Therefore, the development of ERP in Indonesia cannot be separated from the institutionalization of SIA-based business processes. In this sense, AIS acts as both a conceptual and procedural bridge, ensuring that ERP modules do not operate in a vacuum but are instead embedded within coherent workflows.

One of the most visible impacts of ERP development is its effect on the quality of accounting information. Organizations that successfully integrate ERP experience significant improvements in accuracy, consistency, timeliness, and transparency of financial data. ERP eliminates many manual reconciliations and reduces human errors through automated processes.

In Indonesia, empirical studies show a mixed pattern. In organizations where AIS is mature, ERP implementation greatly enhances accounting information quality. Real-time dashboards provide up-to-date financial positions, while integrated databases eliminate redundancy and discrepancies. However, in institutions where AIS is weak, ERP implementation often leads to chaotic financial information, double postings, unbalanced ledgers, missing transaction links, and delays in period closing. This demonstrates a critical conceptual insight: ERP does not improve accounting information quality by itself; it amplifies whatever quality already exists in the underlying AIS. Thus, ERP development in Indonesia must be viewed not simply as a technological upgrade, but as a qualitative enhancement of the entire accounting information ecosystem.

The broader implications of ERP development in Indonesia are strategic rather than merely operational (Arisman et al., 2015). ERP lies at the center of digital transformation efforts, enabling organizations to move toward predictive analytics, automated controls, integrated financial governance, and data driven policy-making. From a competitive standpoint, ERP enables Indonesian firms to enhance their efficiency, transparency, and adaptability in responding to dynamic market conditions.

Here again, the role of AIS is central. Without a strategic approach to AIS, one that standardizes financial classifications, embeds internal controls, and defines chart-of-account hierarchies. ERP cannot deliver its full digitalization potential. The future of corporate financial systems in Indonesia hinges on this integration. Organizations that understand the strategic interplay between AIS and ERP are more capable of achieving sustainable digital transformation, while those that view ERP as merely a software implementation tend to fail in capturing its long-term value.

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Sector/Organization Type	ERP Adoption Level	Key AIS Role	Major Challenges	Relevance
Large Manufacturing Firms	High	Financial consolidation, inventory costing, production accounting	Legacy system integration, skilled labor	SAP/Oracle widely adopted
Bnaking & Financial Institutions	Very High	Regulatory reporting, real-time financial monitoring, audit trail	Cybersecurity, compliance updates	Strong regulatory push (OJK, BI)
Public Sector (Central Government)	Moderate-High	Budget allocation, public fund accounting, transparency	Bureaucratic culture, infrastructure variance	Systems: SPAN, SIPD
Regional Government	Moderate	Budget execution, asset management	SDM capabilities, resistance to change	Uneven adoption across regions
Large Retail & Trade Companies	High	POS integration, inventory accounting, vendor management	Multi-branch synchronization	Omnichannel retail accelerates ERP use
UMKM/Small Enterprises	Low - Moderate	Basic bookkeeping, tax reporting, cash flow control	Cost, digital literacy, change resistance	Uses Jurnal, Odoo, HashMicro

As shown in the table, accounting information systems are the main foundation for ERP success in all organizational categories, especially in the functions of internal control, financial statement consolidation, and audit accuracy. The financial sector shows the highest adoption rate due to strict regulatory requirements from the Financial Services Authority (OJK) and Bank Indonesia in maintaining financial system stability through electronic reporting (e-reporting) and system-based audits (OJK, 2023).

In the manufacturing sector, the need for supply chain integration and system-based cost calculations drives the use of ERP to minimize calculation errors and improve production process efficiency (Deloitte, 2022). The implementation of ERP in the public sector, particularly through the SPAN and SIPD systems, demonstrates the state's efforts to improve fiscal accountability and reduce opportunities for budget irregularities.

However, challenges such as traditional bureaucratic culture, technological capacity disparities between regions, and limited system management staff competencies remain obstacles (World Bank, 2023). A study by Puspitawati & Dewi Anggadini (2020) confirms that the successful implementation of technology in the public sector is greatly influenced by the quality of human resources and organizational readiness, not just the availability of systems.

In MSMEs, although the cost of cloud-based ERP has become more affordable, the challenge of digital accounting literacy is a major factor in the delay in adoption. Winarno & Putri (2022) mention that some MSME players still prioritize manual recording and do not

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fully understand the long-term benefits of ERP in improving business efficiency. In fact, the digitization of MSMEs is a national agenda in strengthening the people's economic structure and digital supply chain integration (Kemenkop UKM, 2022). Thus, strengthening SIA education and digital training needs to be carried out intensively to expand ERP transformation in the small business sector.

Apart from technical and regulatory factors, organizational cultural readiness is a key element in the successful implementation of ERP. Susanto (2021) explains that changing the work mechanism from manual to digital systems requires managers and employees to adapt their mindset. Resistance to change can lead to system underutilization even though the company has invested heavily in ERP. However, companies that have successfully implemented ERP show great benefits such as operational efficiency, increased reporting speed, internal control automation, and strengthened data-based decision making (Navalina et al, 2021).

Furthermore, the role of SIA in ERP affects the competency structure of the accounting profession. Accountants are now required to understand database management, information security, digital business processes, and system-based financial analytics (Supriyati et al., 2022). This has prompted educational institutions to adjust their curricula, incorporating ERP technology, cloud accounting, and data analytics as part of the accounting learning process in higher education (Susanto, 2021). In other words, the ERP transformation has not only impacted business organizations but also human resource development and higher education in Indonesia.

Overall, these trends indicate that the development of ERP in Indonesia has gained strong momentum in line with the growth of national digitalization. SIA plays a central role as the controller of data integrity, the driving force behind reporting systems, and the foundation for cross-sector ERP implementation. The challenges that still arise, especially at the MSME and local government levels, open up opportunities for research and policies to encourage digital readiness, improve technical competence, and provide more equitable infrastructure.

Challenges, Risks, and Strategies for Implementing Accounting Information System-Based ERP in Indonesia

The implementation of AIS-based ERP in Indonesia presents a constellation of intertwined challenges that reflect not only technical constraints, but also fundamental issues related to human capability, organizational culture, and the maturity of financial governance. As Indonesian organizations move toward integrated digital systems, the transition from conventional Accounting Information Systems (AIS) to Enterprise Resource Planning (ERP) reveals gaps that are deeply embedded within technological structures, business processes, and institutional readiness. Understanding these challenges is essential for interpreting why AIS ultimately becomes the core analytical lens of this study.

One of the most persistent challenges arises from the issue of technological and infrastructure readiness. Across different sectors in Indonesia, organizations demonstrate varying levels of technological maturity. While multinational corporations and large domestic enterprises generally operate with strong server infrastructures, stable networks, and high data processing capacity, the same level of readiness cannot be observed across regional governments, smaller firms, and public sector entities. Legacy systems frequently remain in place, often built on outdated architectures that do not conform to the standardized data structures required by ERP. This leads to difficulties during data migration, inconsistencies in master data, and mismatches between existing AIS procedures and the integrated workflows embedded in ERP. When infrastructure fails to support real-time processing and cross-module communication, ERP modules cannot function at the intended level of integration, particularly the financial modules that require constant interaction with procurement, inventory, payroll, and asset management components.

Equally critical is the challenge of AIS user competence and literacy. The success of ERP relies heavily on users' understanding of accounting logic, internal control structures,

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and data flow mechanisms. However, in many organizations in Indonesia, especially within the public sector and regional government units, the level of AIS literacy remains uneven. Employees who are accustomed to manual or semi-manual processes often struggle to adapt to ERP's standardized workflows, automated journal entries, and digital approval systems. Instead of transitioning fully to ERP, some users adopt parallel manual processes, a practice often referred to as "shadow systems," which undermines the reliability of ERP data and weakens the integrity of financial reporting. Research coming from ERP studies highlights that user competence is a decisive factor in ERP success. Moon's global review of ERP failures showed that insufficient user training is one of the most frequently cited reasons for ERP implementation to fail. Kanellou and Spathis found that organizations with strong AIS literacy and structured accounting processes tend to adopt ERP more successfully and experience higher levels of financial data quality. These studies demonstrate that ERP success is not only a matter of software design, but also a matter of human competence rooted in AIS familiarity.

The challenge becomes even more apparent when examining issues related to business process and ERP module integration. ERP is designed around standardized industry practices, and its workflow logic assumes the existence of clear, documented, and consistently implemented processes. Yet, in practice, many Indonesian organizations operate on processes that are fragmented, undocumented, or heavily influenced by bureaucratic patterns. When such processes are transferred into an ERP environment without harmonization, misalignments appear between system design and organizational practice. For example, procurement pathways that depend on multiple layers of manual verification do not align with ERP's streamlined approval structure, resulting in delays, incomplete transactions, or duplicated entries. This problem occurs because ERP does not simply automate old processes; instead, it requires organizations to adapt their business workflows to the system's design. In this context, AIS plays a crucial bridging role. AIS embodies structured financial flows, standard validation rules, and integrated documentation procedures that help organizations align their business processes with ERP modules. The more developed an organization's AIS processes are, the smoother its ERP integration tends to be.

These structural and procedural challenges have direct implications for the quality of accounting information produced by ERP. While ERP has the potential to improve accuracy, timeliness, and consistency of financial reporting, its benefits do not materialize automatically. In organizations where AIS foundations are weak, ERP often amplifies existing data problems rather than solving them. Inconsistent chart-of-account structures, poorly defined transaction categories, and weaknesses in internal control mechanisms lead to errors in automated journal postings, mismatched cross-module transactions, and unreliable financial statements. In contrast, organizations with strong AIS grounding benefit greatly from ERP through real-time financial consolidation, automated reconciliations, and enhanced audit trails. Thus, the quality of accounting information within ERP systems is fundamentally tied to the strength of AIS processes that precede ERP implementation.

The strategic implications of these challenges are profound. Successfully integrating AIS with ERP marks a fundamental shift in how financial systems operate. Instead of relying on fragmented data sources and disconnected reporting structures, ERP allows organizations to move toward predictive analytics, automated internal control environments, and data-driven decision-making. For Indonesian organizations, particularly those in the public sector, ERP represents an opportunity to strengthen financial governance, enhance transparency, and comply with increasingly stringent regulatory requirements. However, these strategic gains can only be achieved if AIS principles are firmly embedded within ERP implementation. Without a strong AIS foundation, ERP becomes a superficial digital veneer, a system that appears modern but lacks the internal coherence and reliability necessary for genuine organizational transformation.

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Given this landscape, it becomes essential to clarify why this study ultimately focuses on AIS. A consistent pattern emerges from global and local ERP literature. Davenport's seminal work highlights that the financial module acts as the backbone of ERP because every operational function eventually converges on financial reporting. Moon's review underscores that ERP failures often originate in financial modules where AIS logic is misaligned with system design. Kanellou and Spathis emphasize that improvements in information quality only occur when organizations possess strong AIS structures prior to ERP adoption. Spathis and Ananiadis further demonstrate that even advanced ERP features fail to deliver value when foundational AIS processes remain weak. These studies collectively show that AIS is not simply one component of ERP, but rather the conceptual and operational anchor that determines whether ERP can function as intended.

In the Indonesian context, where digital maturity varies widely and business processes often require substantial restructuring, AIS becomes even more central. The challenges of technological readiness, user competence, process alignment, information quality, and digital strategy all converge on AIS as the unifying framework guiding ERP success. The choice to anchor this study on AIS is therefore grounded in both theoretical evidence and empirical relevance. AIS is the lens through which the complexities of ERP implementation can be understood, and it is the mechanism through which the long-term strategic goals of digital transformation can be achieved.

4. Conclusions

This study shows that accounting information systems (AIS) play a fundamental role in supporting the implementation of Enterprise Resource Planning (ERP) in Indonesia. The integration of AIS into ERP enables companies to centrally manage financial and operational data, improve information quality, accelerate reporting processes, and strengthen financial governance. In large companies, the implementation of ERP has provided significant benefits in terms of business process efficiency, data accuracy, and data-driven strategic decision-making. Meanwhile, the MSME sector and local governments still face a number of challenges, such as technological limitations, digital accounting literacy, and resistance to organizational change. This shows that even though digital transformation is progressing, the level of organizational readiness varies, so the success of ERP greatly depends on human factors, technological infrastructure, and managerial support.

In addition, this research confirms that the success of ERP is not only influenced by technological factors, but also user competence, organizational cultural readiness, and change management strategies. The role of accounting education and digital literacy is important to ensure the transition of accountants to strategic roles as data analysts and system controllers. The adoption of ERP in the public sector through the SPAN and SIPD systems demonstrates the government's efforts to improve fiscal accountability, although there are still implementation challenges that need to be overcome through the strengthening of human resources and regulatory harmonization.

There are at least four recommendations based on the findings of this study. First, companies and government agencies need to strengthen human resource competencies through ongoing training related to SIA, ERP, and digital technology so that system integration runs optimally. Second, MSMEs need to obtain support through digital assistance programs, access to modular ERP solutions, and technology financing incentives to accelerate digital transformation. Third, the government needs to strengthen the integration of digital systems between agencies and ensure the equitable distribution of technology infrastructure, especially in rural areas. Fourth, universities in Indonesia need to continue developing technology-based accounting curricula, including ERP, data analytics, system auditing, and artificial intelligence, in order to produce professionals who are ready to face digital challenges. Finally, further research is recommended to evaluate the quantitative impact of ERP implementation on the financial and operational performance of companies in Indonesia more comprehensively.

Bibliografy

Ardiansah, M. N., Chariri, A., & Raharja, S. (2021, June). Does E-Commerce impact on accounting information system and organizations performance? In *2nd Annual Conference on Blended Learning, Educational Technology and Innovation (ACBLETI 2020)* (pp. 476–481). Atlantis Press.

Arisman, A., Rohman, A., & Chariri, A. (2015). Integration of accounting information systems, accounting control systems, and corporate performance (Empirical study from companies in Indonesian Stock Exchange). *International Journal of Research in Business and Technology, 6*(1), 782–788.

Fatimah, F., Ashar, N. A., Wulandari, A., Surianti, S., Ismail, R. F., Ainul, A., & Islamanandad, D. (2025). The influence of cloud-based enterprise resource planning (ERP) implementation on the effectiveness of accounting information systems. *International Journal of Financial Economics, 2*(1), 91–105.

Frisdianalis Tihta, F., & Fityan Izza Noor, A. (2025). Design of accounting information system through ERP system development to improve internal control (Study on SME Chipsang Indonesia). *International Journal Multidisciplinary (IJMI), 2*(3), 283–297.

Halimuzzaman, M., & Sharma, J. (2024). The role of enterprise resource planning (ERP) in improving the accounting information system for organizations. In *Revolutionizing the AI-Digital Landscape* (pp. 263–274). Productivity Press.

Halimuzzaman entry above is repeated? No.

Marsudi, A. S., & Pambudi, R. (2021). The effect of enterprise resource planning (ERP) on performance with information technology capability as a moderating variable. *Journal of Economics, Business, & Accountancy Ventura, 24*(1), 1–11.

Navalina, I. L. P., Djajanto, L., & Kamayanti, A. (2021). Designing accounting information systems for primary cash receipts and expenditures in Open ERP-based retail units (ODOO). *Open Access Indonesia Journal of Social Sciences, 4*(3), 281–290.

Nguyen, N. T. H. (2024). *Impact of ERP system implementation on accounting information quality in Vietnamese SMEs.*

Nugraha, D. W., Ismail, H., Wardhana, A., Wijaksana, T. I., & Yunani, A. (2023, December). A systematic literature review: Implementation of ERP systems in logistics companies supply chain management in developed and developing countries. In *International Conference on Mathematical and Statistical Physics, Computational Science, Education and Communication (ICMSCE 2023)* (Vol. 12936, pp. 257–264). SPIE.

Puspitawati, L., & Dewi Anggadini, S. (2019). The influence of the quality accounting information system to the quality of accounting information—Evidence in Indonesia. *Majalah Ilmiah Unikom, 17*(1).

Rosdini, D., & Ritchi, H. (2017, February). On the enterprise-wide accounting system adoption: Study of the information system successfulness—Case of Indonesia. In *SIBR-UniKL 2017 Kuala Lumpur Conference on Interdisciplinary Business and Economics Research.*

Salem, S., Nurdayadi, N., & Alfiandri, A. (2021, December). Cloud accounting: The development of accounting information system in industry 4.0 in Indonesia. In *Conference Series* (Vol. 3, No. 2, pp. 282–294).

Sudarmanto, E., Mulyani, S., Djanegara, M. S., & Sukmadilaga, C. (2022). Influence of quality of accounting information system, development of ethical climate and organizational culture on the effectiveness of corruption risk management and its

impact on the level of organizational corruption at government agencies in Indonesia. *International Journal of eBusiness and eGovernment Studies, 14*(4), 66–95.

Supriyati, S. S., Sri Mulyani, S. M., Harry Suharman, H. S., & Taufiq Supriadi, T. S. (2022). The influence of business models and use of information technology on the quality of accounting information systems digitizing MSMEs post-COVID-19. *Jurnal Sistem Informasi, 18*(2), 36–49.

Sukaesih Kurniati, P., & Suryanto, S. (2021). Accounting information systems in Indonesia: A case study. *Management & Accounting Review (MAR), 20*(2).

Susilowati, D., Suyono, E., Rusmana, O., Wiratno, A., & Setyorini, C. T. (2023). Accounting information system implementation in batik small and medium-sized enterprises. *Corporate Business Strategy Review, 4*(2), 326–334.

Tarigan, A. Y., Elisabeth, D. M., & Mesakh, J. (2025, August). SAP-based ERP implementation and accounting information quality at PT Perkebunan Nusantara IV. In *International Conference on Finance, Economics, Management, Accounting, and Informatics (ICoFEMATICS)* (Vol. 1, No. 1, pp. ACC-004).

Todorović, M., & Čupić, M. (2023). Effects of ERP on accounting information system: Analysis of accountants' attitudes. In *Digital Transformation of the Financial Industry: Approaches and Applications* (pp. 1–17). Springer.

Utomo, D., Suhartono, E., & Machmuddah, Z. (2020). The effect of accounting information systems to facilitate supply chain management in retail companies: Evidence from Indonesia. *International Journal of Supply Chain Management, 9*(3), 863–870.

Widjaja, A., & Matitaputty, S. (2018). Empowerment of small medium enterprises through student participatory action research in implementation of accounting information system. In *SHS Web of Conferences* (Vol. 59, p. 01002). EDP Sciences.

Wijayanti, P., Mohamed, I. S., & Daud, D. (2023). Sustainability of Islamic microfinance in Indonesia: Exploring the role of computerized accounting information systems. *International Journal of Academic Research in Business and Social Sciences, 13*(8), 17437.

Wiranti, T., Putri, T. A., Juniari, D., & Pratiwi, N. A. (2025). The role of sustainability accounting in supporting Sustainable Development Goals (SDGs): A case study of manufacturing companies in Indonesia. *Journal of Social Sciences and Cultural Study, 2*(3), 91–94.