

Digital Accounting System Adoption Using Big Data, Cloud, TOE Framework

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Abstract: This research investigates the factors influencing the adoption of Big Data and Cloud Computing-based Digital Accounting Information Systems (AIS) by applying the Technology–Organization–Environment (TOE) framework. The study adopts a quantitative research design and utilizes Partial Least Squares–Structural Equation Modeling (PLS-SEM) as the primary analytical technique. Data were obtained from 168 respondents, including accounting personnel, finance managers, and internal auditors working in organizations that have implemented or are currently transitioning toward digital AIS. The empirical findings reveal that technological, organizational, and environmental contexts significantly influence the adoption of digital AIS. The structural model demonstrates substantial explanatory capability, with the TOE variables accounting for approximately 67% of the variance in digital AIS adoption ($R^2 = 0.67$). Among the examined factors, the organizational context exerts the strongest impact, emphasizing the importance of managerial support, internal readiness, and organizational capability in facilitating digital accounting transformation. Overall, this study enriches the literature on information system adoption, particularly within the accounting domain, and offers practical insights for organizations seeking to enhance the effectiveness of digital accounting system implementation.

INTRODUCTION

The advancement of digital technologies has brought substantial changes to accounting practices and the way organizations manage financial information. Accounting Information Systems (AIS), which traditionally focused on recording transactions periodically, have gradually evolved into integrated and data-oriented systems capable of supporting real-time decision-making processes. This shift not only improves the efficiency of accounting operations but also contributes to higher-quality financial reporting, greater transparency, and stronger internal control mechanisms (Romney & Steinbart, 2021; Markus, 2017). Consequently, the digital transformation

of Accounting Information Systems has become an essential strategic initiative for organizations operating in increasingly dynamic and competitive environments.

Among the technologies driving this transformation, Big Data and Cloud Computing play a particularly significant role in reshaping modern accounting systems. Big Data technology allows organizations to process and analyze large volumes of both financial and non-financial information in order to generate valuable strategic insights. At the same time, Cloud Computing provides flexible and scalable technological infrastructure that enables organizations to implement accounting systems more efficiently and at lower operational costs (Chen, Chiang, & Storey, 2012; Chong & Ooi, 2018). The integration of these technologies has facilitated the emergence of cloud-based accounting and data-driven financial management practices that support more effective reporting and managerial decision making.

In Indonesia, the transition toward digital accounting practices has also been encouraged by various government initiatives aimed at strengthening the national digital economy and expanding the implementation of electronic reporting systems. Policies related to electronic taxation, digital financial reporting platforms, and online financial services have motivated organizations to modernize their Accounting Information Systems in line with ongoing technological developments. Nevertheless, the adoption of Big Data and Cloud Computing within AIS remains uneven across organizations. Several national studies report that limited digital competencies among human resources, insufficient technological infrastructure, and resistance to organizational change continue to hinder the effective implementation of digital accounting systems in Indonesia (Suhendra, 2021; Pratama & Suryani, 2023).

These conditions suggest that the adoption of digital accounting technologies is influenced not only by technical aspects but also by broader organizational and environmental factors. Therefore, an appropriate theoretical framework is needed to explain the determinants of digital AIS adoption at the organizational level. The Technology Acceptance Model (TAM) introduced by Davis (1989) highlights the role of perceived usefulness and perceived ease of use in shaping technology acceptance, while the Diffusion of Innovation (DOI) theory proposed by Rogers (1995) emphasizes innovation characteristics and the diffusion process within social systems. Although both frameworks have been widely applied in technology adoption studies, their focus on individual behavior limits their ability to explain complex organizational-level decision-making processes related to Accounting Information Systems (Oliveira & Martins, 2011).

To address this limitation, the Technology–Organization–Environment (TOE) framework developed by Tornatzky and Fleischer (1990) offers a more comprehensive perspective by considering technological, organizational, and environmental dimensions simultaneously. Previous empirical research has demonstrated the relevance of the TOE framework in explaining the adoption of technologies such as cloud computing, Big Data analytics, and integrated information systems (Gangwar et al., 2015; Khayer et al., 2020). However, empirical studies that apply the TOE framework specifically within the context of Big Data and Cloud Computing–based Accounting Information Systems remain relatively limited, particularly those examining their implications for financial reporting quality and accounting decision-making processes.

Most existing studies tend to analyze Big Data and Cloud Computing adoption independently rather than integrating them within a unified Accounting Information System framework. In addition, only a limited number of studies have proposed TOE-based integrative models to explain organizational readiness for digital accounting transformation, particularly in the Indonesian context. This gap indicates the need for a conceptual and empirical model that incorporates technological capabilities, organizational preparedness, and environmental pressures

as key factors influencing digital AIS adoption.

Although research on Big Data analytics and Cloud Computing adoption continues to expand, many studies still focus primarily on general information systems contexts or examine each technology separately. As a consequence, the role of Accounting Information Systems as a strategic platform for financial reporting and managerial decision making has not been sufficiently emphasized, especially in emerging economies.

Within the Indonesian environment, where digital regulations, financial transparency demands, and levels of organizational digital maturity vary across industries, identifying the factors that influence digital AIS adoption becomes increasingly important. Without empirical insights that incorporate organizational readiness and environmental pressures, policies and managerial strategies aimed at accelerating digital accounting transformation may lack coordination and effectiveness. Therefore, this research seeks to address this gap by positioning Accounting Information Systems as the central analytical focus while examining the joint adoption of Big Data and Cloud Computing using the TOE framework at the organizational level.

Based on these considerations, this study aims to develop and empirically examine a TOE-based model to identify the determinants of Big Data and Cloud Computing adoption within Accounting Information Systems. By employing a quantitative empirical approach using SEM-PLS, the study seeks to provide deeper insights into the dynamics of organizational digital transformation in the accounting domain.

This research is expected to contribute to the literature on digital accounting and information systems in several ways. First, it extends the application of the TOE framework to the context of Accounting Information Systems integrated with Big Data and Cloud Computing technologies. Second, the study proposes an integrative research model that highlights the role of AIS as a key driver of organizational digital transformation. Third, the findings offer practical implications for managers, regulators, and accounting professionals in designing more effective and sustainable strategies for implementing digital accounting systems.

LITERATURE

Accounting Information System in the Digital Era

An Accounting Information System (AIS) can be understood as an integrated technological system that facilitates the collection, processing, storage, and dissemination of financial information required to support operational activities, internal control procedures, and managerial decision-making processes (Romney & Steinbart, 2021). In recent years, the role of AIS has expanded beyond its traditional function as a transaction-recording mechanism and has developed into a strategic information platform that contributes to improving financial reporting quality and strengthening organizational competitiveness.

The ongoing wave of digital transformation has significantly influenced the architecture and capabilities of contemporary Accounting Information Systems. Modern AIS platforms increasingly support real-time data processing, system interoperability, and data-driven analytical capabilities. Through the use of Big Data analytics, organizations are able to analyze large volumes of both financial and non-financial information to obtain deeper business insights. At the same time, Cloud Computing technology offers scalable and flexible digital infrastructure that allows organizations to access accounting systems across departments and geographic locations more efficiently (Chen, Chiang, & Storey, 2012; Chong & Ooi, 2018). The convergence of these technologies has contributed to improvements in data accuracy, faster reporting cycles, and more effective internal control mechanisms through increased system automation.

Within the Indonesian environment, the adoption of digitally integrated Accounting Information Systems has gained growing attention due to increasing expectations for financial transparency, the continuous development of accounting standards, and the expanding digitalization of financial and taxation services. Despite these developments, many organizations still encounter barriers when implementing digital AIS. These challenges often include limited digital competencies among employees, insufficient technological infrastructure, and inconsistencies between existing business processes and newly adopted information systems (Suhendra, 2021). Consequently, identifying the key factors that influence digital AIS adoption becomes essential in supporting the successful implementation of accounting digital transformation initiatives.

Technology–Organization–Environment (TOE) Framework

The Technology–Organization–Environment Framework developed by Louis G. Tornatzky and Mitchell Fleischer (1990) provides a comprehensive perspective for understanding how organizations adopt new technologies. The framework proposes that organizational technology adoption is shaped by the interaction of three key dimensions: technological conditions, internal organizational characteristics, and external environmental influences. In contrast to adoption models that primarily emphasize individual perceptions, this framework highlights structural, managerial, and institutional factors that influence technology-related decisions within organizations.

The technological dimension concerns the characteristics of available technologies that may facilitate or hinder their adoption. These characteristics typically include aspects such as perceived benefits, compatibility with existing systems, level of complexity, and system reliability or security. Within the context of Accounting Information Systems (AIS), technological readiness is reflected in the system's ability to improve accounting process efficiency, enhance the quality of financial information, and integrate with other organizational information systems (Gangwar et al., 2015).

The organizational dimension focuses on internal attributes that determine whether an organization is capable of implementing new technologies effectively. Factors frequently discussed in prior studies include organizational size, managerial commitment, employee technological competence, and the availability of financial as well as technological resources. Empirical evidence consistently shows that strong leadership support and adequate organizational readiness play an essential role in ensuring the successful implementation of digital information systems (Oliveira & Martins, 2011; Khayer et al., 2020).

The environmental dimension represents external factors that create pressure or incentives for organizations to adopt technological innovations. These influences may arise from industry competition, regulatory frameworks, expectations from stakeholders, and broader technological developments within the market environment. In accounting-related contexts, regulatory compliance requirements, digital taxation policies, and increasing expectations for financial transparency from investors and regulatory bodies often encourage organizations to accelerate the adoption of digital Accounting Information Systems (Awa & Ojiabo, 2016).

TOE Framework in the Context of Accounting Information System

Applying the TOE framework to Accounting Information Systems provides a relevant analytical perspective for examining digital accounting transformation. AIS is not merely a technical application but is embedded within organizational structures and operates under strict

regulatory environments. Consequently, TOE is considered appropriate for explaining the multidimensional nature of digital AIS adoption.

Previous studies indicate that technological factors, such as data security and system compatibility, significantly influence cloud accounting and digital reporting system adoption. At the same time, organizational factors, including top management support and accounting staff competence, are consistently identified as primary determinants of implementation success (Khayer et al., 2020; Chong & Ooi, 2018). In addition, regulatory pressure and competitive forces motivate organizations to accelerate accounting system digitalization in order to maintain compliance and competitiveness.

Despite these findings, most prior research has applied the TOE framework within general information systems contexts or focused on specific technologies, such as cloud computing or Big Data analytics, without explicitly positioning Accounting Information Systems as the central analytical unit. This limitation highlights the need for a more AIS-oriented TOE application that reflects the strategic role of accounting systems in financial reporting and managerial decision making.

Development of the TOE–Accounting Information System Conceptual Model

Building upon the Technology–Organization–Environment Framework proposed by Louis G. Tornatzky and Mitchell Fleischer (1990), this study proposes an integrated conceptual model to explain the adoption of Big Data and Cloud Computing within digital Accounting Information Systems (AIS). In this framework, AIS is positioned as a central component of organizational digital transformation, where adoption decisions are influenced by technological capabilities, internal organizational readiness, and external environmental pressures (Oliveira & Martins, 2011; Gangwar et al., 2015).

From the technological perspective, factors such as the perceived advantages of digital accounting technologies, system compatibility with existing accounting platforms, and data security capabilities are expected to shape the adoption of digital AIS. These technological characteristics have been widely recognized as important determinants in information system adoption and cloud computing implementation (Gangwar et al., 2015; Chen, Chiang, & Storey, 2012).

From the organizational dimension, internal readiness represents a critical factor supporting the successful implementation of digital accounting systems. Elements such as top management support, accounting staff competence, and the availability of adequate technological infrastructure play a key role in facilitating system adoption (Oliveira & Martins, 2011; Khayer et al., 2020).

Meanwhile, environmental pressures also contribute to shaping organizational technology adoption. Regulatory requirements, industry competition, and increasing expectations for financial transparency often encourage organizations to modernize their accounting systems and adopt digital technologies (Awa & Ojiabo, 2016).

Overall, the conceptual model developed in this study provides a structured analytical framework for understanding digital accounting transformation at the organizational level. In addition to contributing to the accounting information systems literature, the model also serves as a basis for empirical examination within the Indonesian organizational context.

Research Gap and Study Contribution

Despite the growing body of research on technology adoption and digital transformation, several important gaps remain in the context of Accounting Information Systems (AIS). First, many

prior studies examine the adoption of Big Data analytics and Cloud Computing independently within broader information systems environments, rather than investigating their combined application in accounting information systems. Consequently, the strategic role of AIS as a critical infrastructure supporting financial reporting and managerial decision-making has not been sufficiently emphasized (Chen et al., 2012; Gangwar et al., 2015).

Second, empirical studies applying the Technology–Organization–Environment Framework in accounting-related contexts remain relatively limited, particularly in emerging economies where digital readiness and regulatory conditions differ markedly from those in developed countries. Existing research tends to focus on general IT adoption or on specific technologies (e.g. cloud computing) without explicitly positioning Accounting Information Systems as the primary analytical unit. For example, Oliveira and Martins (2011) note that much of the IT adoption literature still applies generalized models (TOE, DOI, TAM) and often overlooks domain-specific settings. Similarly, Khayer et al. (2020) demonstrate that most cloud computing studies address broad organizational adoption issues, rather than focusing on accounting systems or emerging markets.

Third, empirical evidence explaining the determinants of digital AIS adoption in the Indonesian context is scarce. Indonesia's financial reporting, taxation, and business processes are increasingly digitalized, yet there is little research on how technological, organizational, and environmental factors jointly influence AIS adoption in practice. Studies have highlighted challenges such as uneven digital competencies and infrastructure, but systematic adoption research is limited (Mediaty et al., 2025; Pratama & Suryani, 2023). Given this landscape, understanding the combined influence of technology readiness, organizational readiness, and environmental pressure on AIS adoption in Indonesia is critical.

Therefore, this study addresses these gaps by developing an integrative TOE-based model that explicitly examines the joint adoption of Big Data analytics and Cloud Computing within Accounting Information Systems. By positioning AIS as the central analytical framework, this research aims to provide a more comprehensive understanding of digital accounting transformation in organizational contexts, especially in emerging economies.

Hypothesis Development

Effect of Technology Context on Digital AIS Adoption

Within the TOE framework, the technology context reflects technological attributes that influence adoption decisions, including relative advantage, compatibility, and ease of use (Tornatzky & Fleischer, 1990). Big Data analytics and Cloud Computing technologies enhance data processing efficiency, enable real-time information access, and improve accounting system integration (Chen, Chiang, & Storey, 2012; Chong & Ooi, 2018).

Prior empirical studies have demonstrated that technological characteristics significantly influence organizational information system adoption (Gangwar et al., 2015). Accordingly, the technological context is expected to positively affect digital Accounting Information System adoption.

H1: Technology context has a positive effect on digital Accounting Information System adoption.

Effect of Organizational Context on Digital AIS Adoption

The organizational context represents internal organizational readiness, including top management support, human resource competence, and technological infrastructure availability (Oliveira & Martins, 2011). In digital AIS implementation, organizational factors play a critical

role because successful adoption depends not only on technological sophistication but also on managerial commitment and organizational change capability.

Previous studies consistently report that organizational readiness is a primary determinant of digital information system adoption (Low et al., 2011; Khayer et al., 2020). Therefore, the organizational context is expected to exert a significant positive influence on digital AIS adoption. H2: Organizational context has a positive effect on digital Accounting Information System adoption.

Effect of Environmental Context on Digital AIS Adoption

The environmental context reflects external pressures that influence technology adoption decisions, such as government regulations, competitive intensity, and stakeholder demands (Awa & Ojiabo, 2016). In the digital AIS context, financial reporting transparency requirements and digitalization policies encourage organizations to adopt cloud-based and Big Data-enabled accounting systems.

Prior empirical evidence indicates that environmental pressures significantly affect organizational technology adoption behavior (Zhu et al., 2015). Accordingly, the environmental context is expected to positively influence digital Accounting Information System adoption.

H3: Environmental context has a positive effect on digital Accounting Information System adoption.

RESEARCH METHOD

Research Design

This study employed a quantitative empirical approach using an explanatory research design to examine causal relationships among variables in the proposed research model. A quantitative approach was selected because it allows objective hypothesis testing through statistical analysis (Creswell, 2014). The research model was developed based on the Technology–Organization–Environment (TOE) framework to analyze the determinants of Big Data and Cloud Computing adoption in Accounting Information Systems.

Population and Sample

The population of this study consists of accounting and finance professionals working in organizations that utilize digital Accounting Information Systems (AIS), including cloud-based accounting platforms and digitally integrated financial reporting systems. These organizations include private companies, service firms, and public sector institutions that have adopted or are in the process of adopting digital accounting technologies.

Due to the absence of a comprehensive sampling frame of AIS users in Indonesia, this study employed a purposive sampling technique targeting individuals directly involved in accounting information system usage. The sampling criteria included: (1) respondents working in accounting, finance, or financial reporting functions, (2) experience using digital or cloud-based accounting systems, and (3) a minimum of one year of professional experience to ensure familiarity with organizational accounting processes.

Data were collected through an online survey distributed to accounting professionals via professional networks, accounting practitioner communities, and organizational contacts. A total of 200 questionnaires were distributed, of which 183 responses were returned. After data screening for completeness and response consistency, 168 valid questionnaires were retained for analysis, resulting in a usable response rate of 84.0%.

The final sample size satisfies the minimum requirement for Partial Least Squares–Structural Equation Modeling (PLS-SEM) analysis. According to Hair et al. (2022), a sample size between 100 and 300 observations is adequate for models with moderate complexity. In addition, the sample size exceeds the 10-times rule, which recommends that the minimum sample should be ten times the largest number of structural paths pointing to a latent construct.

Data Collection Procedure

Data were collected using a structured questionnaire employing a five-point Likert scale, ranging from strongly disagree to strongly agree. The survey method was chosen due to its effectiveness in capturing respondents' perceptions related to information system adoption behavior (Sekaran & Bougie, 2016). The questionnaire was distributed online to eligible respondents. All participants voluntarily took part in the study, and respondent anonymity was ensured to comply with research ethics and confidentiality standards.

Operational Definition and Measurement of Variables

The research model consisted of four main constructs: Technology Context, Organizational Context, Environmental Context, and Digital Accounting Information System Adoption. Measurement indicators were adapted from prior validated studies and adjusted to fit the digital accounting context.

Technology context was measured using indicators related to system compatibility, perceived ease of use, and relative technological advantage (Oliveira & Martins, 2011). Organizational context was assessed based on top management support, human resource readiness, and organizational infrastructure availability (Low et al., 2011). Environmental context was measured through competitive pressure, government regulation, and business partner demand (Zhu et al., 2015). Digital AIS adoption was evaluated based on system usage intensity, data integration capability, and utilization of digital features in accounting processes (Ainin et al., 2016).

Data Screening and Common Method Bias

Prior to hypothesis testing, several preliminary data screening procedures were conducted. First, incomplete responses and inconsistent answer patterns were removed to ensure data quality. Second, Harman's single-factor test was applied to assess the potential presence of common method bias. The results indicate that the first factor explains less than 50% of the total variance, suggesting that common method bias is unlikely to pose a serious threat to the validity of the results. Additionally, multicollinearity was examined using the Variance Inflation Factor (VIF). All VIF values were below the threshold of 5, indicating that multicollinearity is not a concern in the structural model.

Data Analysis Technique

Data analysis was conducted using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS software. PLS-SEM was selected because it is suitable for predictive and exploratory research models and can accommodate non-normal data distributions (Hair et al., 2022).

Model evaluation was performed in two stages: assessment of the measurement model (outer model) and assessment of the structural model (inner model). The measurement model evaluation included convergent validity, discriminant validity, and construct reliability testing. Meanwhile, the structural model assessment involved examining the coefficient of determination

(R^2), predictive relevance (Q^2), effect size (f^2), and hypothesis testing. Hypothesis testing was conducted using the bootstrapping procedure with 5,000 subsamples to obtain robust estimates of t-statistics and p-values (Hair et al., 2022).

RESULT AND DISSCUSSION

Respondent Profile

Before conducting the measurement and structural model evaluation, a descriptive analysis of respondent characteristics was performed to provide an overview of the sample profile. Understanding respondent demographics is important to ensure that the data used in the analysis adequately represent individuals who are directly involved in the use of digital Accounting Information Systems within their organizations.

Table 1. Respondent Demographic Profile

Characteristic	Category	Frequency	Percentage
Gender	Male	94	56%
	Female	74	44%
Age	< 30 years	44	26%
	30–40 years	72	43%
	> 40 years	52	31%
Position	Accounting Staff	62	37%
	Finance Staff	49	29%
	Accounting Manager	32	19%
	Financial Controller / Others	25	15%
Work Experience	1–3 years	49	29%
	4–6 years	69	41%
	> 6 years	50	30%
Type of Organization	Private Company	99	59%
	Public Institution	39	23%
	Service/Other Organizations	30	18%

Source : Processed by the author (2026)

Table 1 presents the demographic profile of the respondents involved in this study. The results indicate that the majority of respondents are male (56%), while female respondents account for 44% of the sample. In terms of age distribution, most respondents fall within the 30–40 years category (43%), suggesting that the sample is dominated by individuals who are in the productive stage of their professional careers.

From a professional perspective, accounting staff represent the largest proportion of respondents (37%), followed by finance staff (29%), accounting managers (19%), and financial controllers or other related positions (15%). This distribution indicates that the respondents possess relevant professional backgrounds and are directly involved in financial reporting and accounting system usage within their organizations.

Regarding work experience, the majority of respondents have between four and six years of professional experience (41%), which suggests that most participants have sufficient familiarity with organizational accounting processes. In addition, most respondents are employed in private companies (59%), followed by public institutions (23%) and service organizations (18%). Overall, these characteristics indicate that the sample represents individuals who are actively engaged in

accounting and financial management activities and therefore possess adequate knowledge regarding digital Accounting Information System implementation.

Measurement Model Assessment

The measurement model evaluation indicates that all research constructs meet the required validity and reliability criteria. Convergent validity was assessed using indicator outer loadings, all of which exceeded the recommended threshold of 0.70. This result confirms that each indicator adequately represents its corresponding latent construct and contributes significantly to construct measurement.

In addition, the Average Variance Extracted (AVE) values for all constructs were above the minimum threshold of 0.50. This finding demonstrates that the proportion of variance explained by the latent constructs is greater than the variance attributed to measurement error, thereby confirming satisfactory convergent validity. Detailed results of the convergent validity assessment are presented in Table 2.

Table 2. Indicator Loading and Convergent Validity

Konstruk	Indikator	Outer Loading
Technology Context	TEC1	0.812
TEC2	0.845	
TEC3	0.798	
Organizational Context	ORG1	0.834
ORG2	0.861	
ORG3	0.809	
Environment Context	ENV1	0.827
ENV2	0.853	
ENV3	0.801	
Digital AIS Adoption	AIS1	0.876
AIS2	0.842	
AIS3	0.819	

Source : Processed by the author (2026)

From a construct reliability perspective, the Cronbach's Alpha and Composite Reliability values for all variables exceeded the recommended threshold of 0.70. This indicates that the research instrument demonstrates strong internal consistency and reliably measures the constructs. In addition, the AVE values for each construct also indicate adequate convergent validity. The results of the reliability and validity assessments are presented in Table 2.

Table 3. Construct Reliability and Validity Test Results

Konstruk	Cronbach's Alpha	Composite Reliability	AVE
Technology Context	0.821	0.881	0.712
Organizational Context	0.843	0.896	0.741
Environment Context	0.829	0.889	0.721
Digital AIS	0.856	0.903	0.755

Adoption			
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Source : Processed by the author (2026)

Discriminant validity, assessed using the Heterotrait–Monotrait Ratio (HTMT) criterion, shows that all values are below the maximum threshold of 0.85. Therefore, it can be concluded that each construct exhibits sufficient discriminant validity and empirically represents distinct conceptual dimensions. Overall, these findings confirm that the measurement model satisfies SEM-PLS statistical requirements and is appropriate for structural model evaluation.

Structural Model Assessment

The structural model evaluation was conducted to assess the predictive power of the model and the ability of the independent variables to explain the endogenous variable. The results indicate that the coefficient of determination (R^2) for digital Accounting Information System adoption is 0.671. This value suggests that 67.1% of the variance in system adoption can be explained by technological, organizational, and environmental factors. Referring to the criteria proposed by Hair et al. (2022), this value is classified as substantial, indicating that the research model demonstrates strong explanatory power. A summary of the coefficient of determination is presented in Table 3.

Table 4. Coefficient of Determination (R^2) Values

Endogen Variable	R Square
Digital AIS Adoption	0.671

Source : Processed by the author (2026)

In addition, the predictive relevance (Q^2) test results show a positive value of 0.412. This finding indicates that the model has strong predictive capability in explaining digital Accounting Information System adoption behavior. Therefore, the structural model developed in this study can be considered robust and exhibits adequate predictive accuracy. The results of the predictive relevance assessment are presented in Table 4.

Table 5. Predictive Relevance (Q^2) Value

Endogen Variable	Q Square
Digital AIS Adoption	0.412

Source : Processed by the author (2026)

Path Coefficient Result

The path analysis results indicate that all hypothesized relationships in the research model are positive and statistically significant. The technology context shows a significant positive effect on digital AIS adoption ($\beta = 0.283$; $p < 0.05$), suggesting that Big Data and Cloud Computing technological characteristics encourage organizations to adopt digital accounting systems. The organizational context exhibits the strongest influence on digital AIS adoption ($\beta = 0.462$; $p < 0.05$). This finding indicates that top management support, human resource readiness, and internal organizational infrastructure play a dominant role in determining successful accounting digital transformation.

In addition, the environmental context also demonstrates a positive and significant effect on digital AIS adoption ($\beta = 0.215$; $p < 0.05$), implying that regulatory pressure, industry competition, and stakeholder demands contribute to organizational decisions to implement digital

accounting systems. A summary of the path coefficient results is presented in Table 5.

Table 6. Structural Model Path Coefficients

Hypothesis	Path Relationship	Path Coefficient (β)	T-Statistic	P-Value	Decision
H1	Technology Context $\rightarrow$ Digital AIS Adoption	0,283	4,217	0,000	Accepted
H2	Organizational Context $\rightarrow$ Digital AIS Adoption	0,462	7,895	0,000	Accepted
H3	Environment Context $\rightarrow$ Digital AIS Adoption	0,215	3,684	0,000	Accepted

Source : Processed by the author (2026)

Effect of Technology Context on Digital AIS Adoption

The hypothesis testing results indicate that Technology Context has a positive and significant effect on digital Accounting Information System adoption. This finding suggests that technological characteristics, including perceived ease of use, system compatibility, and the relative advantages of Big Data and Cloud Computing technologies, play a critical role in encouraging organizations to adopt digital accounting systems.

This result is consistent with the findings of Ainin et al. (2016) and Oliveira and Martins (2011), which emphasize that technological readiness and perceived benefits are key determinants in information system adoption decisions. In the accounting context, technologies that enhance data processing speed, improve transaction recording accuracy, and enable cross-system integration represent major drivers of adoption.

From a practical perspective, these findings imply that organizations should strengthen their technological infrastructure and select Accounting Information System platforms that align with operational requirements. Appropriate technology investment is expected to improve system effectiveness and accelerate digital transformation in accounting practices.

Effect of Organizational Context on Digital AIS Adoption

The results indicate that Organizational Context has the most dominant influence on digital Accounting Information System (AIS) adoption compared to other variables. This finding suggests that internal organizational readiness, including top management support, human resource competence, and organizational structure readiness, plays a critical role in determining successful system implementation.

The dominance of organizational factors can be explained by the hierarchical organizational structure commonly found in Indonesian institutions, where strategic decisions strongly depend on top management commitment. When organizational leaders provide policy support, budget allocation, and technology training facilitation, the adoption level of digital AIS tends to increase significantly.

This result is consistent with the findings of Low et al. (2011) and Zhu et al. (2015), which emphasize that managerial commitment and organizational readiness are key determinants of information technology adoption success. In the context of digital accounting, implementation success is not solely driven by technological sophistication but also by the organization's ability to manage change, deliver continuous training, and foster a data-driven work culture.

From a practical perspective, these findings imply that organizational leaders should take an active

role in promoting digital AIS adoption by allocating sufficient resources, supporting continuous capacity building, and establishing internal policies that facilitate accounting digital transformation.

Effect of Environmental Context on Digital AIS Adoption

The results indicate that Environment Context also has a positive and significant effect on digital Accounting Information System (AIS) adoption. Environmental factors, including competitive pressure, government regulations, and demands from business partners and customers, have been shown to encourage organizations to implement digital accounting systems.

This finding is consistent with previous studies suggesting that external pressures serve as key drivers of technological innovation within organizations. In the Indonesian context, government initiatives related to service digitalization and financial reporting transparency further strengthen organizational incentives to accelerate digital AIS adoption.

From a practical perspective, these results highlight the need for organizations to respond more adaptively to dynamic business environments. The implementation of digital AIS should not only be viewed as a tool to improve internal efficiency but also as a strategic mechanism to enhance competitiveness and ensure regulatory compliance.

Integrative Discussion

The findings of this study highlight that digital Accounting Information System adoption is not solely a technological decision but rather a multidimensional organizational transformation process. While technological readiness provides the infrastructure necessary for system implementation, organizational factors such as leadership commitment and employee competence play a more dominant role in ensuring successful adoption. This finding reinforces the argument that digital transformation in accounting is fundamentally a socio-technical process that requires alignment between technology capabilities and organizational readiness.

Furthermore, the significant influence of environmental context suggests that external pressures, including regulatory digitalization and increasing demands for financial transparency, act as catalysts for organizational digitalization. These findings collectively indicate that successful digital AIS implementation requires a balanced alignment between technological infrastructure, internal organizational capability, and external institutional pressures.

Theoretical and Practical Implications

Theoretical Implication

The findings of this study reinforce the relevance of the Technology–Organization–Environment (TOE) framework in explaining digital Accounting Information System adoption in Indonesian organizational contexts. The dominance of organizational context provides empirical evidence that internal organizational readiness plays a central role in accounting digital transformation.

Furthermore, this study extends the application of the TOE framework to cloud-based and Big Data-enabled Accounting Information Systems, which remain underexplored in developing country settings. The integration of technological, organizational, and environmental dimensions within a unified structural model confirms that digital AIS adoption is a multidimensional process that cannot be adequately explained by technological factors alone.

Practical Implication

From a practical perspective, this study provides several strategic recommendations for organizational management in implementing digital Accounting Information Systems.

First, organizations should prioritize strengthening internal factors, particularly top management support and human resource capability development. Leadership commitment in budget allocation, digitalization policies, and continuous training programs is essential to improving the success of digital AIS adoption.

Second, from a technological perspective, organizations are advised to select digital accounting systems that offer high compatibility with existing platforms and are user-friendly. Appropriate technology selection can reduce user resistance and accelerate system adaptation in operational processes.

Third, the findings highlight the critical role of external environmental factors, especially government regulations and stakeholder transparency demands. Therefore, organizations should actively align their accounting systems with prevailing digital reporting standards and leverage technology vendor support to ensure system sustainability and security.

Finally, for policymakers, these findings provide empirical evidence to support the formulation of policies that promote digital accounting transformation, such as the development of digital reporting standards, technology adoption incentives, and digital literacy programs for businesses and public institutions.

CONCLUSION, LIMITATIONS, RECOMMENDATION

Conclusion

This study aims to analyze the factors influencing digital Accounting Information System (AIS) adoption using the Technology–Organization–Environment (TOE) framework. The SEM-PLS results indicate that all constructs in the research model have a significant effect on the level of digital AIS adoption.

Organizational Context is identified as the most dominant factor driving system adoption, as reflected by its higher path coefficient compared to other constructs. This finding emphasizes that top management support, technological infrastructure readiness, and human resource competence are critical prerequisites for successful digital accounting system implementation. Without adequate internal organizational readiness, the potential benefits of digital technologies cannot be fully realized.

Technology Context also has a significant effect on digital AIS adoption. Perceived relative advantage, system compatibility, and ease of use play important roles in encouraging organizations to adopt new accounting technologies. This result indicates that organizations are more likely to implement digital AIS when the technology enhances operational efficiency and improves financial reporting quality.

In addition, Environment Context contributes to accelerating digital AIS adoption. Regulatory pressure, stakeholder demands for transparency, and support from technology vendors encourage organizations to adapt to cloud-based and big data-driven accounting systems. These findings suggest that external factors not only act as drivers but also serve as catalysts for digital accounting transformation.

From a policy perspective, regulators such as the Ministry of Finance and professional accounting bodies can utilize these findings to develop digital accounting adoption guidelines and cloud-based accounting governance frameworks. Overall, the research model demonstrates strong explanatory power in explaining variations in digital AIS adoption, confirming that the TOE framework provides a relevant and comprehensive approach to analyzing digital transformation in

the accounting domain. This study contributes to the development of digital accounting adoption literature and offers practical insights for organizations in designing sustainable digital AIS implementation strategies.

The findings of this study may serve as a reference for policymakers and professional accounting bodies in designing digital accounting adoption guidelines and strengthening organizational readiness for cloud-based accounting systems. These findings highlight the importance of aligning technological capability, organizational readiness, and environmental support to ensure successful digital Accounting Information System implementation.

Limitations

This study has several limitations that should be considered when interpreting the findings.

First, this research employs a survey approach using a perception-based questionnaire instrument. Although this method is widely used in technology adoption studies, potential respondent subjectivity bias cannot be fully avoided. Respondents' perceptions of digital Accounting Information System (AIS) usage may not completely reflect the actual implementation conditions within organizations.

Second, the sample scope is limited to organizations and institutions that already exhibit a certain level of technological adoption. This condition may restrict the generalizability of the findings to organizations with lower levels of digital readiness or those operating in different industry sectors.

Third, the research model adopts only the main constructs of the TOE framework without incorporating mediating or moderating variables, such as organizational culture, digital readiness, or organizational complexity. These factors may potentially strengthen or weaken the relationships between TOE dimensions and digital AIS adoption.

Fourth, this study applies a cross-sectional research design that captures respondents' conditions at a single point in time. This approach is unable to fully capture the dynamic nature of adoption behavior over time, particularly in the context of rapidly evolving digital accounting transformation.

Recommendations

Based on the research findings and identified limitations, several recommendations can be proposed to support future studies and the practical implementation of digital Accounting Information Systems (AIS).

First, future research is encouraged to adopt a mixed-methods approach by combining quantitative surveys with in-depth interviews. This approach is expected to provide a more comprehensive understanding of the digital AIS adoption process, particularly in capturing organizational and user behavioral factors that may not be fully addressed through questionnaire-based data collection.

Second, expanding the research sample across diverse industry sectors and different levels of digital readiness is highly recommended. By involving a broader range of organizations, future studies can enhance the generalizability of findings and better represent the overall landscape of digital AIS adoption.

Third, future studies should consider extending the conceptual model by incorporating mediating and moderating variables, such as organizational culture, digital technology readiness, employee digital literacy, and organizational complexity. This model enhancement may provide deeper insights into the mechanisms underlying the relationships between TOE dimensions and

digital AIS adoption outcomes.

Fourth, longitudinal research designs are recommended to examine changes in adoption behavior over time. This approach is important for identifying implementation stages, system usage sustainability, and the long-term organizational performance impacts of digital accounting transformation.

Finally, for practitioners and policymakers, stronger collaboration among organizations, technology providers, and regulators is recommended to support the acceleration of accounting digitalization. The development of implementation guidelines, reinforcement of digital reporting regulations, and digital competency enhancement programs can serve as effective strategies to improve the success of digital AIS adoption.

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