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IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY IN ACCOUNTING INFORMATION SYSTEMS: A SURVEY STUDY OF LOCAL GOVERNMENTS IN YOGYAKARTA

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Abstract: *This study examines the adoption of Blockchain Technology in Accounting Information Systems (AIS) within local governments in Yogyakarta using the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. Specifically, it investigates the effects of performance expectancy, effort expectancy, social influence, and facilitating conditions, along with trust and regulatory support, on behavioral intention and actual usage. A quantitative survey was conducted among accounting and IT personnel in local government agencies, and data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that performance expectancy, trust, and regulatory support significantly and positively influence the intention to adopt blockchain-based AIS, while facilitating conditions are more closely associated with actual usage. Trust mediates the relationship between effort expectancy and intention, and regulatory support strengthens the effect of performance expectancy. The study contributes to the extension of the UTAUT model by incorporating trust and regulatory support in a public sector context, offering theoretical and practical implications for enhancing blockchain adoption. Findings suggest that improving system reliability, digital infrastructure, and regulatory clarity can increase the likelihood of successful implementation in local governments.*

Keywords: Accounting Information Systems, Blockchain Technology, Local Government, Regulatory Support, Technology Adoption, Trust, UTAUT.

INTRODUCTION

Technological advancement in the public sector is a strategic measure to realize good governance, particularly in the domain of financial management and accountability (Wong et al. 2024). In Indonesia, local governments are under increasing pressure to enhance transparency, efficiency, and accuracy of financial reporting in line with national bureaucratic reform (BPKP 2022). Among emerging innovations, Blockchain Technology a distributed ledger that ensures data integrity, traceability, and transparency shows considerable promise. Recent studies emphasize its potential to improve accounting information quality and integrate effectively with technologies such as IoT and XBRL (Norbu et al. 2024).

The adoption of blockchain technology in the public sector has received growing academic attention, owing to its potential to enhance transparency, accountability, and

operational efficiency in government services. Prior studies have investigated its application in areas such as land administration, digital identity, and public record management, yielding promising outcomes in data integrity and bureaucratic streamlining (Rekunenko et al. 2025; Koo & Cuandra, 2022). However, these studies predominantly originate from advanced economies contexts characterized by well-established technological infrastructure and regulatory frameworks raising concerns about the transferability of these findings to developing-country settings (Ramos & Queiroz 2022; Cahyono 2023).

In developing countries, blockchain adoption research remains limited and largely conceptual. Many contributions emphasize the potential benefits or discuss policy-level challenges without delivering empirical insights into how public organizations perceive and approach blockchain (Azmi & Nugroho 2023). Especially underexplored is the integration of blockchain into Accounting Information Systems (AIS), which are critical for public financial governance. The few existing studies that address blockchain in public-sector AIS tend to center on technical feasibility or strategic advantages, while overlooking the organizational and contextual determinants of adoption in real-world settings (Ummah & Sofyani 2024).

In the Indonesian context, empirical research on blockchain adoption in government remains particularly sparse. A recent survey across 24 government agencies from central to local levels identified relative advantage and stakeholder engagement as significant drivers of Diffusion of Innovation, while factors such as complexity, regulation, top management support, and competence had no significant effect; the diffusion remains at the informational stage (Islami & Mita 2022; Marselita 2024). Additionally, qualitative exploration into blockchain's potential to combat corruption in the public sector highlighted the importance of top management support, organizational readiness, and the promise of permissioned blockchain models but this work remains largely conceptual and has yet to be tested quantitatively (Indrayani & Widiastuti 2020; Pitria et al. 2024).

Notably, one study applying UTAUT to AIS within Indonesian local government indicates that facilitating conditions and trust are significant predictors of employees' intention to adopt blockchain in AIS (Setiawan et al. 2023). While this offers some empirical grounding, it remains one of the few localized studies and lacks broader theoretical integration and contextual depth regarding bureaucratic dynamics and regulatory constraints.

This study addresses these gaps by delivering robust empirical evidence on intention to adopt blockchain in local government AIS across Indonesia. Diverging from prior research that often emphasizes technical feasibility or conceptual promise, this research foregrounds the interplay of technological, organizational, and regulatory factors within bureaucratic environments (Indrayani & Widiastuti 2020; Widodo & Darma 2025). Grounding the analysis in the UTAUT framework and extending it appropriately, it offers nuanced, context-specific insights for policymakers in developing countries, while simultaneously enriching theoretical models of technology adoption in the public sector (Lita Permatasari et al. 2024; Tahar et al. 2023). In doing so, this study contributes both practically by informing strategies to facilitate blockchain integration into AIS and theoretically by refining and situating adoption models in a real-world, developing-country context.

To comprehensively understand technology adoption in public sector AIS, this study applies the Unified Theory of Acceptance and Use of Technology (UTAUT) encompassing performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al. 2003). Studies in the past five years have expanded UTAUT by integrating variables such as trust, institutional support, and awareness, especially relevant to blockchain

adoption in public governance (Judijanto & Gamaliel 2024).

Given public institutions unique decision-making hierarchies, budget limitations, and legal oversight, this research extends UTAUT by incorporating trust and regulatory support (Utami et al. 2023). Trust is essential for ensuring confidence in the security and validity of blockchain systems, while regulatory support offers legal clarity and policy incentives that foster technology uptake (Ramadhani et al. 2024). Contemporary international studies confirm that adding these variables enhances the predictive power of adoption models in high-risk public contexts.

This study contributes in three significant ways: (1) It generates context-specific empirical insights into the readiness and perception of local government personnel in Yogyakarta regarding blockchain-based AIS; (2) It enriches the public technology acceptance literature by extending UTAUT with trust and regulatory support; and (3) It employs PLS-SEM to empirically test a comprehensive model of blockchain adoption determinants in AIS. The findings are expected to fill both theoretical and empirical gaps and offer policy recommendations to enhance infrastructure, build stakeholder awareness, and develop regulatory frameworks supporting transparent, sustainable local financial management.

Blockchain Adoption in Accounting Information Systems in Local Governments

In recent years, blockchain technology has attracted significant attention in the public sector due to its potential to transform accounting information systems (AIS) through enhanced transparency, auditability, and operational efficiency (Kumari & Devi 2022). By providing immutable and tamper-proof transaction records, blockchain can strengthen internal controls, mitigate fraud risks, and enable real-time verification in budgeting, procurement, and financial reporting (Pugna & Duțescu 2020). In the context of local governments, such capabilities are particularly relevant given the persistent challenges of governance, accountability, and citizen trust in financial management systems (Han et al. 2023).

Despite these advantages, blockchain adoption in the public sector especially in developing countries remains limited. Common barriers include inadequate infrastructure, insufficient digital literacy among government personnel, resistance to organizational change, and unclear regulatory frameworks (Atik & Kelten 2021). In Indonesia, digitization of government financial systems has progressed through initiatives such as the Local Government Information System (SIPD). However, blockchain has not yet been formally integrated into most AIS platforms, reflecting the need for both technological readiness and strong behavioral intention from users such as accounting officers and IT staff in local government agencies (Zhen et al. 2021).

The successful adoption of blockchain in AIS within local governments requires not only investment in infrastructure but also an understanding of the behavioral, organizational, and institutional factors influencing adoption. This is especially important in public sector contexts, where decision-making often depends on trust in technology, compliance with legal frameworks, and alignment with broader governance objectives (Prux et al. 2021).

Theoretical Foundation

The adoption of blockchain technology in public sector Accounting Information Systems (AIS) can be comprehensively understood through the Unified Theory of Acceptance and Use of Technology (UTAUT) framework UTAUT identifies four primary determinants performance expectancy, effort expectancy, social influence, and facilitating conditions that significantly shape user intention and behavior toward technology adoption (Venkatesh et al. 2003; Padovani & Iacuzzi 2021). Over the past five years, numerous empirical studies have expanded UTAUT to examine blockchain

adoption in government financial systems, emphasizing the interplay between organizational, technological, and regulatory factors.

Performance expectancy, or the degree to which blockchain is perceived to improve work performance, has been repeatedly shown to be a decisive factor in adoption intentions in public (Zheng 2021). Effort expectancy, related to system usability and complexity, plays a dual role—simplified processes encourage adoption, while high technical complexity can impede it unless balanced by adequate training and support (Sharma et al. 2022). Social influence, particularly leadership endorsement and peer support, is another strong driver, especially in collectivist administrative (Vincent et al. 2020). Facilitating conditions, including infrastructure readiness, regulatory frameworks, and skilled human resources, are critical enablers for sustainable blockchain integration in government AIS (Albrecht et al. 2021; Lardo et al. 2022).

Recent literature also highlights trust and organizational readiness as mediating factors in blockchain adoption for public financial management (Balios et al. 2020). Trust reduces perceived risks associated with blockchain's novelty, while readiness both technical and managerial ensures smoother implementation. Moreover, regulatory clarity and policy alignment have emerged as essential conditions, particularly in developing countries, to overcome resistance and uncertainty (Pham & Dau 2022; Rahmawati & Subardjo 2022). By integrating these insights, the UTAUT model provides a robust theoretical foundation for analyzing blockchain adoption within the public sector, especially in contexts aiming for enhanced transparency, accountability, and efficiency in financial management (Garanina et al. 2022).

Hypotheses Development

The Unified Theory of Acceptance and Use of Technology (UTAUT), introduced by (Venkatesh et al. 2003), remains one of the most robust frameworks for analyzing technology adoption behaviors. This model integrates constructs from earlier theories such as the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT) and identifies four primary determinants: performance expectancy, effort expectancy, social influence, and facilitating conditions. Recent empirical studies Yen & Wang (2021) confirm the continued relevance of these constructs, particularly in the context of emerging technologies such as blockchain.

In the public sector, blockchain adoption introduces unique institutional and operational considerations. Consequently, the UTAUT framework is often extended with additional variables to capture context-specific dynamics. Among these, complexity has been recognized as a barrier to adoption, as higher perceived complexity can reduce the willingness to implement blockchain-based accounting systems (Bonyuet 2020; Pratiwi & Ermaya 2024). Conversely, relative advantage, reflecting the perceived superiority of blockchain over existing systems in terms of transparency, traceability, and fraud prevention, has been shown to significantly enhance adoption intentions (Stratopoulos & Wang 2022).

Trust is another critical factor in the public sector, where technology must align with principles of security, reliability, and public accountability. Studies indicate that higher trust in blockchain's technical integrity and institutional endorsement positively influences adoption likelihood (Chowdhury et al. 2023; Mishra et al. 2023). Furthermore, competitive pressure stemming from benchmarking against other government bodies or fulfilling intergovernmental performance standards can act as an external driver accelerating blockchain adoption (Alkafaji et al. 2023; Shao et al. 2021).

Complexity and Intention to Use Technology

In the UTAUT framework, effort expectancy represents the perceived ease of using technology. Conversely, complexity captures users' perception of how difficult or demanding it is to understand and apply a new technology in practice. A higher level of perceived complexity generally decreases users' willingness to adopt technological innovations, as it increases the cognitive effort required to operate the system and raises feelings of uncertainty and anxiety (Venkatesh et al. 2003). Many studies highlight complexity as a barrier to technology adoption, particularly in organizational settings where users possess limited technical skills or experience with digital transformation. In the context of blockchain-based accounting information systems in local governments, public employees (PNS) may perceive blockchain as difficult to understand and operate due to its technical nature involving cryptographic mechanisms and decentralized structures. Such perceptions can lead to hesitation, fear of making errors, and a lack of confidence in using the technology effectively. (Georgiou et al. 2024; Neves et al. 2025). Consequently, greater complexity tends to reduce employees' intention to use blockchain systems, as they view the technology as requiring excessive effort and specialized expertise. This is consistent with prior research indicating that complexity negatively influences the adoption of digital technologies in the public sector (Zhang et al. 2020).

H_1: Complexity has a negative effect on the intention to use technology in local governments.

Relative Advantage and Intention to Use Technology

The concept of relative advantage, describes the degree to which an innovation is perceived as superior to the previous technology or process. In UTAUT, this aligns with performance expectancy the belief that the new technology will enhance performance (Faccia & Petratos 2021). For blockchain technology, relative advantage is evident in improved data transparency, faster transaction processing, automated verification, and decision-making efficiency (Hartley et al. 2022; Seshadrinathan & Chandra 2021). Such advantages also enhance accountability and trust, as blockchain provides secure and immutable records. Recent empirical findings confirm that clear, measurable benefits significantly contribute to adoption intentions (Malik et al. 2021; Mishra et al. 2020).

H_2: Relative advantage has a positive effect on the intention to use technology in local governments.

Trust and Intention to Use Technology

Although trust is not one of the core constructs of the UTAUT model, it plays a critical role in technology adoption, particularly in decentralized systems such as blockchain. Trust involves the belief that technology can maintain data integrity, ensure transaction security, and prevent unauthorized access (Noman & Gwenhure 2025). In the public sector, blockchain's ability to provide immutable and verifiable records is highly relevant for meeting accountability requirements (Hamadeh et al. 2025; Shahzad et al. 2024). Cross-sector studies consistently show that trust is a significant predictor of blockchain adoption (Krishna et al. 2024; Maragno et al. 2023).

H_3: Trust has a positive effect on the intention to use technology in local governments.

Facilitating Conditions and Intention to Use Technology

Facilitating conditions, a core UTAUT construct, refer to the availability of resources and support necessary to effectively use technology. This includes infrastructure, hardware and software, managerial support, technical assistance, and skill development programs (Jena 2022; Seshadrinathan & Chandra 2025). In blockchain adoption, adequate support reduces technical barriers and

increases user confidence (Malik et al. 2021). Moreover, a work environment that fosters innovation and collaboration further improves the likelihood of successful adoption (Faccia & Petratos 2021; Fang et al. 2025).

H_4: Facilitating conditions have a positive effect on the intention to use technology in local governments.

Social Influence and Intention to Use Technology

Social influence refers to the extent to which an individual perceives that important others believe they should use a particular technology (Hamadeh et al. 2025; Malik et al. 2021). This influence can come from colleagues, supervisors, industry leaders, or institutional culture. Explicit support from management and role modeling by respected peers can enhance perceptions of usefulness and legitimacy for blockchain adoption (Shahzad et al. 2024). Subjective norms and social expectations reinforce beliefs and encourage adoption intentions (Seshadrinathan & Chandra 2025; Slapničar et al. 2023).

H_5: Social influence has a positive effect on the intention to use technology in local governments.

Competitive Pressure and Intention to Use Technology

Competitive pressure is not a core UTAUT construct but is relevant in the Technology-Organization-Environment (TOE) framework, which highlights external forces as drivers of innovation adoption. In the public sector, competitive pressure may arise from demands for efficiency, transparency, accountability, and improved service quality (Al-Mamary et al. 2025; Mensah & Khan 2024). Blockchain offers strategic advantages through secure data management, tamper-proof records, and audit readiness (Zhou et al. 2024; Tan et al. 2025). Recent studies confirm that competitive pressure increases the likelihood of adopting new technology to maintain legitimacy and stakeholder trust (Abdel-Hamid et al., 2022; Nofel et al. 2024).

H_6: Competitive pressure has a positive effect on the intention to use technology in local governments.

METHOD

The research sample comprises 295 respondents representing local government employees in Yogyakarta who are involved in the use or management of Accounting Information Systems. Yogyakarta was selected as the research location because it is recognized as one of Indonesia's leading regions in implementing digital governance and smart city initiatives. The local government has shown strong commitment to digital transformation and transparency in financial management, supported by collaborations with universities and technology institutions that actively promote innovation in public sector accounting. Therefore, Yogyakarta provides a representative and strategic context for examining the adoption of blockchain-based accounting information systems in local governments. The selection of respondents was conducted using purposive sampling, targeting individuals with relevant roles and knowledge of blockchain technology implementation in public sector accounting.

The purposive sampling technique was chosen to ensure that the respondents have direct involvement with financial and administrative applications, thus providing relevant insights into the adoption of blockchain technology in Accounting Information Systems (De Filippi et al. 2022; Lombardi et al. 2025). This approach aligns with prior research in technology adoption that emphasizes the importance of respondent expertise for improving the validity of findings (Raymond et al. 2019). The diversity in age, educational background, and professional certification strengthens the generalizability of the results while maintaining the specificity of the research context.

This study applies a quantitative research design with a survey method to investigate the effects of complexity, relative advantage, trust, facilitating conditions, social influence, and competitive pressure on the intention to adopt blockchain-based technology within local government accounting information systems (Qasim & Kharbat 2020; Lombardi et al. 2025). Primary data were collected through structured questionnaires, which were pre-tested by five experts in accounting information systems to ensure item clarity, construct validity, and content alignment. Measurement items for each variable were adapted from validated instruments in prior literature: complexity from Joshi and Sharma (2023); and relative advantage and trust form Lee (2023); facilitating conditions and social influence from (Benchis et al. 2025); and competitive pressure (Wang et al. 2022; Wong et al. 2024). The dependent variable, intention to use, was operationalized following the Unified Theory of Acceptance and Use of Technology (UTAUT) and recent empirical validations in government technology adoption contexts (Sousa 2023). All questionnaire items were measured using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"), consistent with recommendations.

The minimum required sample size was determined using G*Power 3.1.9.7 following established methodological guidelines. A total of 663 questionnaires were distributed, and 295 valid responses were obtained, exceeding the required minimum sample threshold and achieving a 45% response rate. Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 due to its suitability for exploratory and predictive research. The analytical procedures included assessing construct validity and reliability, evaluating model fit, and testing the research hypotheses through bootstrapping techniques in accordance with recommended PLS-SEM procedures. Table 1 presents the measurement instruments used in this study, including the constructs, indicators, and their reference sources. This table helps clarify how each variable was operationalized and measured to ensure the reliability and validity of the research model.

The research model in this study was developed based on the integration of prior empirical findings and theoretical perspectives regarding technology adoption in accounting information systems (Koerniawan & Wibowo 2023; Fang et al. 2025). Several variables, including complexity, relative advantage, trust, facilitating conditions, social influence, and competitive pressure, have been identified as critical determinants influencing the intention to use blockchain-based accounting information systems (Gunawan et al. 2025; Rupa et al. 2025). Recent studies highlight that complexity often acts as a barrier to technology adoption, as higher perceived difficulty reduces user willingness to adopt new systems (Sherif & Mohsin 2021; Tangi et al. 2022). Conversely, relative advantage has consistently been shown to positively impact adoption decisions, as users are more likely to embrace innovations that provide efficiency and effectiveness compared to traditional systems (Oesterreich et al. 2019).

Table 1. Measurement Instrument of Variables

Variables	Definition	Indicators
Social Influence (SI)	The extent to which an individual perceives that important stakeholders believe they should adopt blockchain in AIS (Sherif & Mohsin 2021)	Three measurement items adapted from (Sherif & Mohsin 2021)
Facilitating Conditions (FC)	The degree to which an individual believes that organizational and technical infrastructure exists to support blockchain adoption in AIS (Garanina et al. 2022; Lardo et al. 2022)	Four measurement items adapted from (Garanina et al. 2022; Lardo et al. 2022)
Complexity (COM)	The extent to which blockchain-based AIS is perceived as difficult to understand or use, potentially hindering adoption (Akter et al. 2024)	Three measurement items adapted from (Akter et al. 2024)
Relative Advantage (RA)	The perception that blockchain adoption offers superior benefits compared to current AIS, such as transparency, traceability, and fraud prevention (Han et al. 2023; Hossain et al. 2024).	Four measurement items adapted from (Han et al., 2023; Hossain et al. 2024).
Trust (TRU)	The degree to which users have confidence in blockchain's reliability, security, and immutability in AIS (Bonyuet 2020; Ciappei et al. 2023).	Four measurement items adapted from (Bonyuet 2020; Ciappei et al. 2023).
Competitive Pressure (CP)	The extent to which external market or regulatory forces drive local governments to adopt blockchain-based AIS (Balios et al. 2020; Utami et al. 2023).	Three measurement items adapted from (Balios et al. 2020; Utami et al. 2023).
Intention to Use (ITU)	The extent to which individuals have a conscious plan or readiness to use blockchain-based accounting information systems in their organizational tasks. This reflects a user's willingness and commitment to adopt the technology in the near future (Han et al. 2023; Qasim & Kharbat 2020).	Three measurement items adapted from (Han et al. 2023; Qasim & Kharbat 2020).

Trust also emerges as a crucial factor, particularly in blockchain contexts where data integrity and transparency are vital (González-Mendes et al. 2024; Haija et al. 2025). In addition, facilitating conditions, such as organizational support and resource availability, are reported to strengthen technology adoption. Social influence, which reflects peer and managerial pressure, significantly affects behavioral intention in public sector adoption of new technologies (Nofel et al. 2024). Finally, competitive pressure has been found to drive organizations to adopt innovative accounting systems to maintain legitimacy and competitiveness in the digital era (Khalfan et al. 2022; Boonstra & Van Offenbeek 2021).

Based on these insights, the proposed research model is constructed as illustrated in Figure 1.

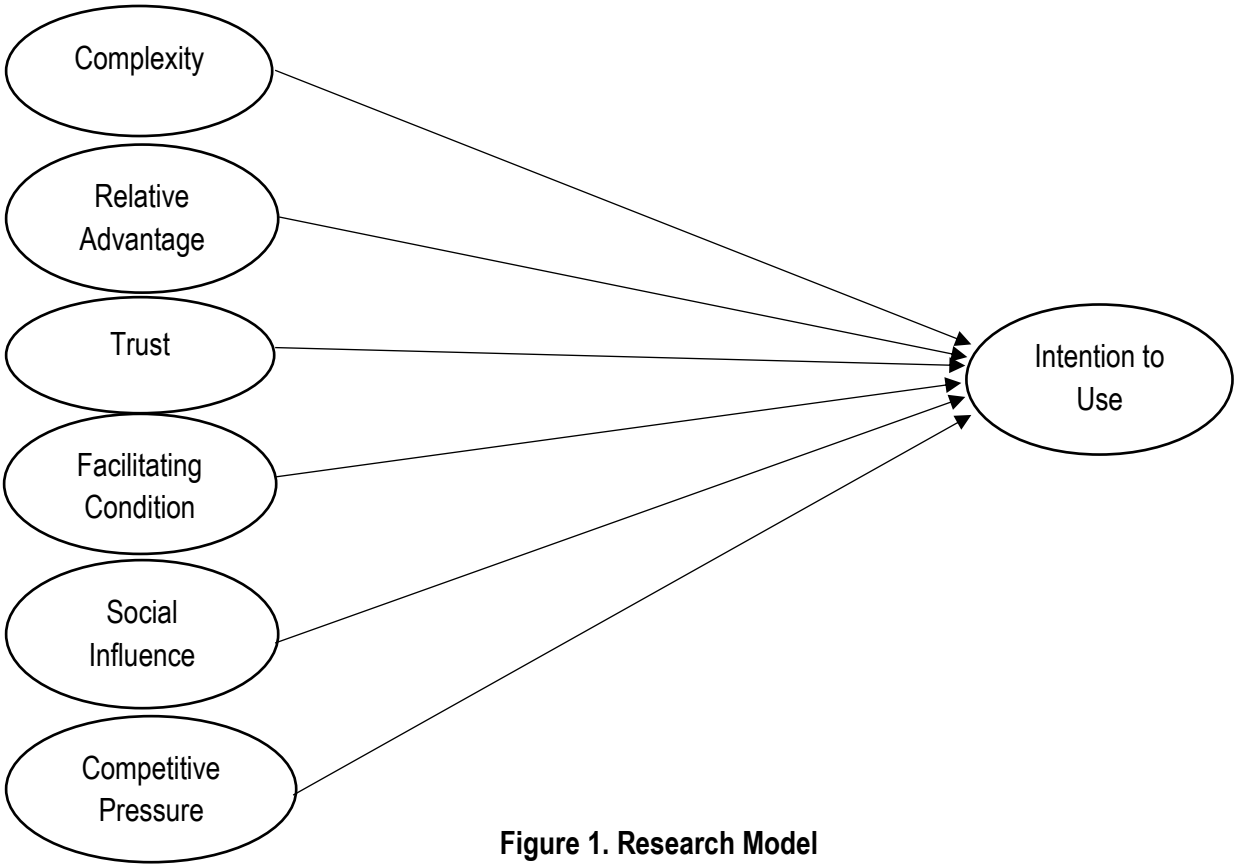

Figure 1. Research Model

RESULTS

Descriptive Statistics and Correlation

The demographic profile indicates that 55.59% of the respondents are male and 44.41% female. This proportion reflects the higher representation of male employees in managerial and technical positions within local governments, particularly in departments handling accounting and information systems. Such roles are closely associated with decision-making and technology implementation, making their insights critical for understanding blockchain adoption. Most participants are within the age ranges of 20–35 years (45.76%) and 36–50 years (45.08%), suggesting that the majority belong to an active and productive workforce more adaptable to technological innovation. Younger employees are generally more familiar with digital tools and show higher readiness to engage with emerging technologies such as blockchain. In terms of education, most respondents hold a Bachelor's degree (62.04%), followed by a Master's degree (37.23%) and a Doctorate (0.73%). Furthermore, 67.12% have an accounting background, which ensures that respondents possess the technical and financial literacy necessary to evaluate blockchain's applicability in accounting information systems. This combination of demographic characteristics supports the study's validity, as it captures the perceptions of individuals most relevant to blockchain-based public sector accounting systems. Table 2 summarizes the demographic characteristics of the respondents, such as gender, age, education level, and work experience. This information provides an overview of the sample distribution and supports the interpretation of the study's findings.

Table 2. Demographic Profile of Respondents

Category	Frequency (n)	Percentage (%)
Gender		
Male	164	55.59
Female	131	44.41
Age		
20–35 years	135	45.76
36–50 years	133	45.08
> 50 years	27	9.16
Education Level		
Bachelor's	183	62.04
Master's	110	37.23
Doctorate	2	0.73
Educational Background		
Accounting	198	67.12
IT	52	17.63
Non-IT/Non-accounting	45	15.25
Professional Certification		
Yes	167	56.61
No	128	43.39

These findings are consistent with prior studies, which also emphasized that trust and perceived complexity strongly influence adoption intentions in emerging technologies (Kumar Sharma 2022; Wamba et al. 2024). Furthermore, recent research in public sector contexts confirms that relative advantage and facilitating conditions often lag behind in shaping adoption due to institutional and bureaucratic constraints (Lai et al. 2023; Nofel et al. 2024). Thus, the descriptive analysis provides preliminary insights that enrich the interpretation of the PLS-SEM results in the next stage of analysis. Table 3 displays the results of the descriptive statistical analysis for each research variable, including the mean, minimum, maximum, and standard deviation values. These results provide a general description of the data characteristics and distribution used in this study.

Table 3. Results of Descriptive Statistics Tests

Variable	N	Min	Max	Mean	Std. Dev
Social Influence	295	6	15	10.48	1.786
Complexity	295	4	20	12.86	2.646
Trust	295	7	20	14.43	2.378
Facilitating Conditions	295	2	10	7.02	1.309
Relative Advantage	295	2	10	5.86	1.390
Competitive Pressure	295	5	15	10.77	1.616
Intention to Use	295	5	20	13.81	2.361

Table 3 presents the results of descriptive statistical tests for each construct. The analysis shows that the mean values of the variables ranged from 5.86 (Relative Advantage) to 14.43 (Trust). Trust (M = 14.43; SD = 2.378) and Intention to Use (M = 13.81; SD = 2.361) obtained the highest average scores, indicating that respondents perceive blockchain adoption in accounting information systems as trustworthy and demonstrate a relatively strong behavioral intention to adopt the technology. Meanwhile, Relative Advantage (M = 5.86; SD = 1.390) was rated lowest, suggesting that respondents may not yet fully perceive the comparative benefits of blockchain technology over existing systems.

In addition, Complexity (M = 12.86; SD = 2.646) scored moderately high, reflecting that respondents acknowledge certain challenges associated with blockchain-based systems. Social Influence (M = 10.48; SD = 1.786) and Competitive Pressure (M = 10.77; SD = 1.616) show consistent values, indicating that external pressures and peer influences play a role, but not as dominant as trust or behavioral intention. Facilitating Conditions (M = 7.02; SD = 1.309) highlight the availability of organizational and technical resources perceived by respondents.

Convergent Validity and Reliability

Convergent validity and reliability were assessed to ensure the adequacy of the measurement model. The results of the convergent validity test, as presented in Table 4, show that all indicator loadings exceeded the minimum threshold value of 0.70 and the Average Variance Extracted (AVE) values were above 0.50, confirming satisfactory convergent validity for all constructs (Hair et al. 2014). Furthermore, the reliability results displayed in Table 5 indicate that both Cronbach's Alpha and Composite Reliability (CR) values were greater than 0.70, demonstrating internal consistency and reliability of the measurement model.

Table 4. Outer Loading

Variable	Indicator (Item Statement)	Outer Loading	AVE
COM (Complexity)			0.791
	COM1 - Conceptually, Blockchain Technology is difficult to understand	0.823	
	COM2 - Using Blockchain Technology is not easy	0.951	
CP (Competitive Pressure)			0.860
	CP1 - Competition in the modern era will require local government agencies (OPD) to adopt Blockchain Technology	0.930	
	CP2 - To improve performance, local government agencies (OPD) need to implement Blockchain Technology.	0.925	
FC (Facilitating Conditions)			0.687
	FC1 - Local government agencies (OPD) have sufficient financial resources to utilize Blockchain Technology	0.830	
	FC2 - Local governments possess skilled technicians to support the provision of Blockchain Technology	0.835	

	FC3 - Local government agencies (OPD) have the necessary knowledge to operate Blockchain Technology	0.802	
	FC4 - Blockchain Technology is perceived as attractive by employees within local government agencies (OPD).	0.849	
ITU (Intention to Use)			0.731
	ITU1 - It is predicted that in the future, local government agencies (OPD) will adopt the Government Financial Application System (SIABB)	0.803	
	ITU2 - *In the near future, local government agencies (OPD) are expected to use the Government Financial Application System (SIABB)*	0.841	
	ITU3 - There is an expectation that local government agencies (OPD) will implement the Government Financial Application System (SIABB).	0.859	
	ITU4 - Employees in local government agencies (OPD) are expected to feel comfortable with the use of the Government Financial Application System (SIABB).	0.884	
RA (Relative Advantage)			0.830
	RA1 - Using blockchain improves the quality of accounting information.	0.880	
	RA2 - Blockchain increases transparency in government financial reports.	0.929	
	RA3 - Blockchain provides more reliable data for decision-making.	0.922	
	RA4 - Blockchain increases efficiency in accounting information systems.	0.913	
SI (Social Influence)			0.560
	SI1 - Colleagues consistently keep up with technological developments.	0.716	
	SI2 - Co-workers support technological advancement.	0.746	
	SI3 - Leaders of local government agencies (OPD) are likely to consider the use of Blockchain Technology within Government Financial Application System (SIABB) as necessary	0.781	
T (Trust)			0.736
	T1 - Blockchain Technology is considered reliable.	0.873	
	T2 - Blockchain Technology can accomplish tasks in SIABB effectively.	0.906	
	T3 - Blockchain Technology is perceived as secure from potential issues	0.791	

Table *5.* Cronbach's Alpha and Composite Reliability

	Cronbach's alpha	Composite reliability (rho_c)
Competitive Pressure	0.838	0.925
Complexity	0.756	0.883
Facilitating Conditions	0.849	0.898
Intention to Use	0.877	0.916
Relative Advantage	0.932	0.951
Social Influence	0.634	0.792
Trust	0.819	0.893

Discriminant Validity

Discriminant validity was assessed using the Fornell–Larcker criterion, cross-loading analysis, and the Heterotrait–Monotrait ratio (HTMT). According to Fornell and Larcker's (1981) criterion, discriminant validity is achieved when the square root of the Average Variance Extracted (AVE) for each construct is greater than its correlation with other constructs. In addition, discriminant validity was further examined using cross-loading analysis, while HTMT values below the threshold of 0.85 Sarstedt et al. (2019) and Savelyeva & Park (2022) were considered acceptable. These results are in line with recent empirical studies that emphasize the importance of discriminant validity in ensuring construct uniqueness in PLS-SEM applications (Lesi & Safkaur 2020; Uren & Edwards 2023). Therefore, it can be concluded that the measurement model in this study demonstrates satisfactory discriminant validity, thereby supporting the robustness of subsequent structural model analysis. Table 6 presents the Fornell–Larcker criterion values used to assess discriminant validity among the constructs. The results indicate whether each construct shares more variance with its indicators than with other constructs in the model.

Table 6. Fornell-Lacker Values

	Competitive Pressure	Complexity	Facilitating Conditions	Intention to Use	Relative Advantage	Social Influence	Trust
Competitive Pressure	0.928						
Complexity	-0.085	0.890					
Facilitating Conditions	0.607	0.012	0.829				
Intention to Use	0.747	0.024	0.608	0.855			
Relative Advantage	0.664	0.062	0.621	0.606	0.911		
Social Influence	0.481	0.032	0.577	0.481	0.575	0.748	
Trust	0.563	0.086	0.574	0.620	0.769	0.555	0.858

As presented in Table 5, the square root of AVE for each construct (bold diagonal values) is greater than the correlations with other constructs, indicating that the constructs are empirically distinct. Furthermore, the cross-loading analysis shows that all items load higher on their respective constructs than on other constructs. In addition, all HTMT values were below the recommended threshold, thereby confirming adequate discriminant validity.

R-Square

The Adjusted R-Square values of the research model fall within the range of 0.25–0.50, indicating that the model has a low level of accuracy. Adjusted R-Square values in the range of 0.50–0.75 indicate a moderate level of accuracy, while values above 0.75 indicate a high level of accuracy (Hair et al. 2014). In this study, the R-Square value for Intention to Use is 0.634, with an Adjusted R-Square of 0.632, showing only a 0.2% difference. These results indicate that the perception of intention to use has a moderate level of accuracy, thereby supporting the model's explanatory power.

Hypothesis Test

The path coefficient analysis indicates that competitive pressure (β = 0.546, p < 0.001), facilitating conditions (β = 0.155, p = 0.006), and trust (β = 0.261, p = 0.001) significantly affect intention to use, highlighting the importance of external market dynamics, institutional support, and user confidence in technology adoption. These findings are consistent with recent studies emphasizing competitive environment and trust as critical drivers of digital transformation (Shao et al. 2021; Van Helden et al. 2025).

In contrast, complexity, relative advantage, and social influence were not significant, suggesting that in this context, user decisions are shaped more by structural and institutional factors than by individual perceptions or social drivers. This result aligns with Alkafaji et al (2023) and Shao et al. (2021) who found that in organizational settings, external pressures and resource availability often outweigh social or individual considerations in adoption behavior.

Table 7. Path Coefficient

	Hypo	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Conclusion
Competitive Pressure → Intention to Use	H_6	0.546	0.537	0.076	7.195	**0.000**	**Supported**
Complexity → Intention to Use	H_1	0.050	0.042	0.043	1.172	0.121	Unsupported
Facilitating Conditions → Intention to Use	H_4	0.155	0.157	0.062	2.501	**0.006**	**Supported**
Relative Advantage → Intention to Use	H_2	-0.070	-0.074	0.081	0.862	0.194	Unsupported
Social Influence → Intention to Use	H_5	0.022	0.027	0.065	0.339	0.367	Unsupported
Trust → Intention to Use	H_3	0.261	0.270	0.084	3.103	**0.001**	**Supported**

Discussion

This study provides empirical insights into how various organizational and contextual factors shape the intention to adopt blockchain technology in *Accounting Information Systems* (AIS) within public sector institutions. By applying the *Unified Theory of Acceptance and Use of Technology* (UTAUT) as the main theoretical lens, the findings demonstrate that not all theorized variables exert the same influence, underscoring the importance of contextual adaptation when utilizing technology adoption models in government environments (Bonyuet 2020)

The evidence highlights the pivotal role of external pressure, particularly competitive pressure, in influencing public institutions to consider blockchain-based AIS. In the current era of digital governance, public entities are increasingly required to demonstrate transparency, efficiency, and responsiveness (Garanina et al. 2022). These external demands create a competitive atmosphere that pushes institutions to explore and implement advanced technological solutions. Such findings are consistent with the *Technology-Organization-Environment* (TOE) framework, which emphasizes that environmental pressures often act as catalysts for innovation, particularly in bureaucratic settings where change is externally motivated (Eka Ramadani et al. 2023; Rahmawati & Subardjo 2022).

Institutional readiness, reflected in the availability of infrastructure, technical support, and managerial commitment, also emerges as a critical enabling factor (Hossain et al. 2024). The presence of facilitating conditions reduces perceived implementation barriers and enhances confidence among potential users (Lardo et al. 2022). In public organizations, where systemic inertia and bureaucratic procedures are common, the assurance of robust support systems becomes essential to successful adoption. This supports the UTAUT assertion that supportive environments can significantly bolster user intention, especially for complex technologies like blockchain (Sharma et al. 2022). Similarly, trust in the technology strengthens adoption intention, particularly in the context of public sector accountability. Blockchain's decentralized and immutable mechanisms for data recording and verification enhance organizational confidence in system reliability and align with the values of integrity and accountability that public organizations are expected to uphold (Zheng 2021).

Conversely, several assumptions from UTAUT were not supported in this study. Complexity, despite being an inherent feature of blockchain, did not emerge as a significant deterrent. This suggests that improvements in system interfaces, higher levels of digital literacy, or effective training programs may have minimized the salience of technical complexity in adoption decisions (Hartley et al. 2022). Likewise, perceived relative advantage did not significantly influence intention, which may reflect the absence of clear communication or demonstrable benefits in the organizations studied. Public institutions often adopt a cautious stance, requiring concrete evidence of efficiency gains and regulatory support before recognizing new technologies as superior alternatives (Faccia & Petratos 2021). Furthermore, social influence was not found to be a determinant of adoption, diverging from UTAUT's original assumptions. This result highlights how centralized, policy driven decision-making in public sector organizations reduces the relevance of interpersonal persuasion or normative expectations (Georgiou et al. 2024; Zhang et al. 2020).

Theoretically, this study contributes by refining the explanatory scope of the UTAUT framework in public sector AIS adoption. Traditional UTAUT applications focus primarily on individual-level determinants such as performance expectancy, effort expectancy, and social influence (Bonyuet 2020). However, the findings of this study show that in the bureaucratic context of Indonesian local governments, institutional trust and

organizational preparedness are stronger predictors of adoption intention than individual perceptions or social norms. This highlights the dominance of coercive and normative pressures such as compliance with regulations, resource allocation, and organizational legitimacy—over voluntary or discretionary motivations for change (Alkafaji et al. 2023). By integrating perspectives from the *Technology Organization Environment* (TOE) framework and Institutional Theory, the study demonstrates that UTAUT cannot be applied as a one-size-fits-all model but requires contextual adaptation to capture the realities of government settings. Thus, this research extends the theoretical boundaries of UTAUT by embedding institutional and organizational dimensions into a model originally centered on individual drivers, offering a more holistic understanding of technology adoption in public governance.

From a practical perspective, the results underscore that the success of blockchain adoption in public sector AIS depends less on individual innovativeness and more on institutional enablers and organizational capacity. Governments and local agencies must not only invest in secure and reliable digital infrastructures but also design clear regulatory frameworks that strengthen trust in blockchain-based systems. Training and continuous capacity-building initiatives are necessary to prepare employees to operate and manage blockchain applications effectively, reducing resistance and anxiety toward new technologies (Shao et al. 2021). In addition, managerial commitment at the top level is crucial, as leadership involvement ensures policy alignment, resource mobilization, and long-term sustainability of adoption efforts. For policymakers, these findings highlight the importance of synchronizing blockchain initiatives with national digital transformation agendas and ensuring regulatory clarity to overcome bureaucratic inertia (Garanina et al. 2022). For practitioners in local governments, the study provides actionable guidance: prioritize institutional trust-building, provide adequate resources and technical support, and foster a supportive organizational culture. These measures not only enhance the likelihood of successful blockchain adoption but also ensure that such adoption contributes to broader goals of transparency, accountability, and efficiency in public financial management (Chowdhury et al., 2023).

CONCLUSION

This study aimed to examine the determinants influencing the intention to adopt blockchain technology in public sector Accounting Information Systems (AIS). A quantitative approach was employed using a survey of local government employees, and the data were analyzed with PLS-SEM to test the effects of competitive pressure, complexity, facilitating conditions, relative advantage, social influence, and trust on intention to use blockchain in AIS. The findings reveal that competitive pressure, facilitating conditions, and trust significantly influence adoption intention, while complexity, relative advantage, and social influence do not play a significant role. These results indicate that in bureaucratic environments, external pressures and institutional preparedness are more decisive drivers of innovation than individual-level perceptions.

From a theoretical perspective, this study contributes by refining the UTAUT framework in public sector contexts, showing that institutional trust and organizational readiness serve as stronger enablers than perceived advantages or social influences. This underscores the necessity of contextual adaptation of technology adoption models when applied in government settings. From a practical perspective, the findings suggest that blockchain adoption in public AIS requires institutional trust, adequate resources, managerial commitment, and regulatory clarity. Successful implementation depends not only on individual readiness but also on strong institutional support

and alignment with broader digital transformation strategies.

Despite these contributions, this study has several limitations as it was conducted within a specific local government context, which may affect generalizability. Future studies are encouraged to expand the analysis to other regions or institutions, explore the role of evolving regulatory frameworks, and employ qualitative approaches to capture deeper insights into organizational behavior and resistance toward blockchain adoption. In conclusion, blockchain adoption in public sector accounting is shaped more by institutional capacity and external demands than by individual-level drivers. These findings provide a better understanding of digital transformation in the public sector and offer useful directions for further academic inquiry.

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