PUBLIC ACCOUNTING and SUSTAINABILITY

Testing the Intention of Employees in Local Government to Adopt Blockchain Technology in Accounting Information Systems (AIS)

Rizka Saniyatul Ummah[1]*, Hafiez Sofyani[1,2]

[1]Department of Accounting, Faculty of Economics and Business, Universitas Muhammadiyah Yogyakarta, Special Region of Yogyakarta, Indonesia

[2]Business and Sustainability Research Center, Universitas Muhammadiyah Yogyakarta, Special Region of Yogyakarta, Indonesia

***Correspondence**: rizkasaniyatulummah01@gmail.com

Research aims: This study aims to determine the intention of local government employees to adopt blockchain technology in Accounting Information Systems (AIS) using the Technology Readiness and Acceptance Model (TRAM) theory.
Design/Methodology/Approach: The research participants were individuals employed in Local Government Units (LGUs) in Yogyakarta Special Region Province who were selected through a purposive sampling technique. Data were collected using a questionnaire and analyzed utilizing the Partial Least Square method.
Research findings: The results revealed that the perceived usefulness of blockchain technology in AIS was determined by comfort, optimism, and security from fraud. Meanwhile, the perceived ease of use was determined by comfort, innovation, and security from fraud. These results also found that perceived usefulness and perceived ease of use positively influenced the intention of local government employees to use blockchain technology in AIS.
Theoretical contribution/Originality: This research contributes to validating the TRAM theory in the context of blockchain technology adoption in AIS in local governments.
Practitioner/Policy implication: The research findings offer valuable insight for relevant authorities, namely the Indonesian Ministry of Home Affairs, Ministry of Communication and Information, and local government entities, to prepare for implementing blockchain technology in AIS in local government.
Research limitation/Implication: The study was conducted using quantitative methods with a limited sample size.
Keywords: Blockchain; Accounting Information System; Local Government; Technology Readiness and Accptance Model

Classification
Research Paper

History
Submitted:
December 01, 2023

Revised:
January 15, 2024

Accepted:
February 02, 2024

DOI:
10.18196/pas.v1i1.3

Citation: Ummah, R. S. & Sofyani, H. (2024). Testing the Intention of Employees in Local Government to Adopt Blockchain Technology in Accounting Information Systems (AIS). *Public Accounting and Sustainability, 1*(1), 1-18.

Introduction

Today, blockchain technology has become a phenomenon, not only in terms of digital currency development but also in enterprise and government business applications. Some countries such as Europe (Falwadiya & Dhingra, 2022), Kyrgyzstan (Anvar Kyzy et al., 2022), the Republic of Moldova, Dubai, the USA, Sweden, Singapore, Saudi Arabia, and the United Kingdom (Khan et al., 2022) have successfully implemented blockchain technology in their governments. Blockchain is an open ledger technology for storing efficient and permanent transaction data (Bandaso et al., 2022). Blockchain technology was first introduced by Satoshi Nakamoto in 2008 as a digital currency (Bitcoin) (Falwadiya & Dhingra, 2022). This technology continues to evolve so that blockchain generations are 1.0, 2.0, 3.0, and 4.0. Blockchain generation 1.0 is a cryptocurrency widely used for digital money transactions. Blockchain 2.0 focuses on developing smart contracts, securities trading, smart property, clearing payments, and banking instruments. Blockchain 3.0 deals with blockchain regulation and governance in public sectors, such as government, health, science, technology, culture, and arts. Meanwhile, blockchain 4.0 focuses on information technology systems to integrate businesses and support supply chain management, financial management, workflow management, and asset management (Bhaskar et al., 2021).

Specifically, finance and accounting are some fields affected by blockchain technology (Rahmawati & Subardjo, 2022). Blockchain technology provides a new way to record, process, and store accounting data or transactions (Pratiwi, 2022). Blockchain can potentially affect all accounting processes, from transactions initiated, processed, authorized, recorded, and reported. According to Falwadiya and Dhingra (2022), blockchain has many benefits, such as a distributed ledger, shortening the chain, permanent data so it cannot be changed at any time, a more efficient audit process, safe data from cybercrime, and updated data in real-time.

In Indonesia, blockchain technology in public sector has been applied to the fields of taxation, archives, health records, and copyright data collection (Atmomintarso & Wirawan, 2021; Lukita, 2020; Noor, 2020; Rahardja, 2022). The goal is to create efforts to improve governance in government as one of the targets of the SDGs vision. In Indonesia, blockchain technology has not yet been applied to government financial management. However, the Indonesian Minister of Communication and Information Technology stated that the government is preparing blockchain technology to be applied in e-government, including the Accounting Information System (AIS) (Kominfo, 2019). Blockchain technology will specifically be implemented for e-budgeting at the village, sub-district, district/city, and provincial levels. Utilizing blockchain technology in AIS can improve efficiency, effectiveness, and transparency (Hasthoro, 2010). According to Huy and Phuc (2020), blockchain can increase the effectiveness of AIS in Vietnam. Since research on the preparation for implementing blockchain technology in Indonesian local governments to support AIS has not been conducted, this study aims to examine the intention of employees in local governments to adopt blockchain technology in AIS.

Theoretically, user acceptance of technology implementation is explained in the Technology Readiness and Acceptance Model (TRAM) theory (Chen & Lin, 2018). TRAM theory asserts that the factors influencing the intention to adopt a technology include perceived usefulness, perceived ease of use, and intention to use, with additional antecedent variables of comfort, optimism, security, and innovation (McNamara et al., 2022). Optimism and innovation will encourage users to have a positive perception of technology. However, technology's lack of security and comfort will hinder its use. Meanwhile, according to Naeem et al. (2022), intention to use technology is influenced by two main factors: perceived usefulness and perceived ease of use. Perceived usefulness is defined as a person's belief that technology can improve performance (Mukherjee et al., 2022). On the other hand, the perception of ease of use is the ease of technology operation (Kabir, 2021).

Explicitly, this research replicates previous research conducted by McNamara et al. (2022). The previous research model was modified by developing security variables into fraud security and data privacy insecurity. Rahmawati and Subardjo (2022) argue that blockchain technology can increase security from fraud, but Luthra et al. (2022) claim that blockchain faces the challenge of privacy data leakage. Although blockchain technology has not been used in local governments, this research is expected to contribute to developing TRAM theory in the context of blockchain technology adoption in AIS in local governments. In addition, this research is expected to provide input to relevant authorities, such as the Ministry of Home Affairs, Local Government, and the Ministry of Communication and Information Technology, in preparing for the implementation of blockchain technology in Indonesia.

Literature Review and Hypotheses Development

Technology Readiness and Acceptance Model (TRAM)

Technology Readiness and Acceptance Model (TRAM) is a theory that combines the Technology Readiness Index (TRI) theory with the Technology Acceptance Model (TAM) theory (Chen & Lin, 2018). TAM theory argues that ease of use and usefulness are the main factors for individuals using technology (Hashimy et al., 2023; McNamara et al., 2022; Taherdoost, 2022). Meanwhile, TRI theory measures individual readiness for

new technology with four dimensions: optimism, innovation, discomfort, and insecurity (McNamara et al., 2022). Furthermore, the TRI theory components linked directly to TAM theory will result in a more specific model. TRAM theory states that factors influencing the intention to adopt a technology include perceived usefulness, perceived ease of use, and intention to use with antecedent variables of comfort, optimism, innovation, and security. This theory was chosen because it explains and connects personal perspectives with technology's work (Aripradono, 2021).

Blockchain Technology

Blockchain technology is a peer-to-peer distributed ledger system, not controlled by a central authority, using algorithms and data connected using cryptography (Falwadiya & Dhingra, 2022). Blockchain technology has three components: block, chain, and network (Noor, 2020). Blocks contain records of transactions recorded in the ledger with different times, sizes, periods, and specifications. This activity is referred to as the data recording process. Furthermore, blocks with different specifications will be connected by chains. This connection between blocks uses the concept of hashing (Derler et al., 2019). Hashing is an algorithm that produces mathematical functions that cannot be described. The network is a point containing a complete record of transactions recorded in the blockchain network.

Based on the type and category of blockchain technology, it is divided into public permissionless, public permitted, private permitted, and private permissionless (Falwadiya & Dhingra, 2022). Public permissionless blockchains allow individuals to join, access, transact, and participate in a network. Public-permitted blockchains allow individuals to join and read transactions, but there are restrictions on writing and performing transactions. Private permitted blockchains can only be accessed by authorized participants authorized by the network owner. Meanwhile, a private permissionless blockchain is a type of blockchain with restrictions on joining and reading transactions on the network.

Blockchain Technology in Government

Blockchain technology in government can help keep track of distributed ledgers so that events can be presented sequentially. In addition, blockchain implementation can also be used in the government sector in digital identity, passports, court decisions, criminal records, online voting, public financing plans, business licenses, and taxation (Verma & Sheel, 2022).

In Dubai, blockchain technology is applied in Dubai Economic Development (DED) (Khan et al., 2022). DED is one of the departments within the Dubai Government responsible for developing economic plans and policies while providing services to domestic and international investors. DED connects government entities such as the Dubai Electricity and Water Authority and the Economic Department with the Dubai Silicon Authority, Dubai Chamber of Commerce, Ministry of Labor, Dubai Courts, and Dubai Statistics. The blockchain service in DED has antivirus and antimalware security. Implementing blockchain in DED has resulted in increased trust, standardization of regulatory checks, reduced operating costs, improved customer satisfaction, document authenticity, increased accountability, and a positive environment.

Through the Ministry of Internal Affairs and Communications, the Japanese Government has developed a Blockchain-Based Tender System that is expected to help with tender submissions. Furthermore, through the Minister of Finance, the State of Cyprus has passed regulations on blockchain and cryptocurrency. In the United Arab Emirates (UAE), blockchain is used to support taxation, online trading platforms, digital passports, diamond trading, and vehicle history records. Furthermore, Australia, China, Estonia, France, Ghana, Georgia, Honduras, Kazakhstan, Sweden, Switzerland, Ukraine, and the UK have also used blockchain technology in their governments (Jun, 2018).

Although it has many opportunities, blockchain technology provides several challenges, such as data privacy leaks, lack of regulation, lack of supporting infrastructure, lack of support from the government, and the lack of blockchain technology experts (Khan et al., 2022).

Blockchain Technology at AIS

Based on research by Huy and Phuc (2020) in Vietnam, blockchain technology provides comfort in recording accounting transactions. The emergence of blockchain technology makes transactions more efficient, effective, and inexpensive (Huy & Phuc, 2021). In addition, blockchain technology can shorten the chain because all ledgers are distributed. Implementing blockchain technology in AIS can improve the quality of information, such as timeliness, reliability, and comparability. In addition, blockchain technology can reduce information inaccuracy in financial reports.

Further, the study of ALSaqa et al. (2019) explained that implementing blockchain technology in AIS can provide real-time AIS data, continuous auditing and monitoring, and financial fraud detection. AIS with blockchain technology is updated in real-time to reduce accounting discrepancies at the end of the period. In addition, auditors can track transactions at any time. Organizations can provide access to third parties so that financial information can be distributed promptly. Integrating blockchain technology and accounting can contribute to changing manual AIS processes to digital ones. As a result, all transactions can be processed faster. This will eliminate delays in financial reporting. In line with research, Kwilinski (2019) states that blockchain technology is used to improve the quality, transparency, efficiency, and security of accounting processes and management monitoring.

Hypotheses Development

The Technology Readiness and Acceptance Model (TRAM) theory elucidates that personality dimensions influence individuals' use of technology. According to TRAM, the personality dimensions are comfort, optimism, innovation, and security (Chen & Lin, 2018; McNamara et al., 2022). Meanwhile, perceived usefulness and ease of use are the central cognitive beliefs influencing user acceptance of technology.

Comfort

Comfort is the feeling of pleasure of individuals in using technology to support their activities (Lieny, 2021). Feelings of comfort will relate to whether individuals can use and control new technology to support activities (Rafdinal & Senalasari, 2021). Individuals comfortable with new technology tend to assume it can improve their performance (Mukherjee et al., 2022). In addition, comfortable technology is likely to be friendly to users. In other words, individuals who feel comfortable with blockchain technology will tend to find it easy to use. Based on research by Igbaria et al. (1994) and McNamara et al. (2022), comfort positively influences perceived usefulness and ease of use.

H_{1a}: Comfort has a positive effect on perceived usefulness.
H_{1b}: Comfort has a positive effect on perceived ease of use.

Optimism

Optimism is an individual's positive view of technology (Lara et al., 2022). Optimistic individuals assume technology can provide benefits, such as increased control, flexibility, and high efficiency. Optimism can also help create greater confidence that technology is easy to use (Cimbaljević et al., 2023). In other words, optimistic individuals will view technology as providing more benefits and easy learning. Based on research by McNamara et al. (2022), Chen and Lin (2018), and Rafdinal and Senalasari (2021), optimism has a positive effect on perceived usefulness and perceived ease of use.

H_{2a}: Optimism has a positive effect on perceived usefulness.
H_{2b}: Optimism has a positive effect on perceived ease of use.

Innovation

Innovation is the tendency of individuals to be pioneers in the use of technology and leaders in thinking about technology (Rafdinal & Senalasari, 2021). Innovative individuals have a positive impression of the usefulness of new technology. In addition, innovative individuals will rule out the uncertain potential value and unclear benefit value of new technology. According to Cimbaljević et al. (2023), innovative individuals will be more willing to adopt and try new technologies, so individuals tend to think that technology is easy to use. Therefore, innovation has a positive effect on perceived usefulness and perceived ease of use (Chen & Lin, 2018; Cimbaljević et al., 2023; Kampa, 2023; McNamara et al., 2022; Rafdinal & Senalasari, 2021).

***H_{3a}**: Innovation has a positive effect on perceived usefulness.*
***H_{3b}**: Innovation has a positive effect on perceived ease of use.*

Security from Fraud

Rahmawati and Subardjo (2022) stated that blockchain implementation can increase security from fraud. This is because the blockchain working system uses a peer-to-peer network (Tiron-Tudor et al., 2021). The same thing was also stated by Centobelli et al. (2022) that using blockchain technology can increase transparency. Therefore, blockchain technology can overcome fraud with increased transparency. Security is also the condition of being free from threats and dangers (Azizah, 2020). Individuals' security about technology is often associated with their ability to work well and transact safely (Cimbaljević et al., 2023). Individuals who believe technology is safe will assume that the technology can support performance. Furthermore, individuals who feel insecure will assume that technology is more complex (Rafdinal & Senalasari, 2021). Based on research by McNamara et al. (2022), security has a positive effect on perceived usefulness and ease of use.

***H_{4a}**: Security from fraud has a positive effect on perceived usefulness.*
***H_{4b}**: Security from fraud has a positive effect on perceived ease of use.*

Data Privacy Insecurity

Shin and Ibahrine (2020) asserted that blockchain security against data privacy is one of the threats in Korea. One respondent said there was no confirmation of data privacy in blockchain implementation. The same thing was also conveyed by Luthra et al. (2022), namely, that blockchain faces the challenge of data privacy leaks. Insecurity is related to a sense of distrust in technology. These feelings will cause individuals to worry and assume that using technology will harm them. Individuals who feel insecure about technology will tend to reject technology (Rafdinal & Senalasari, 2021). This will encourage the perception that new technology is not beneficial and is challenging to use. Research by Chen and Lin (2018) demonstrated that data privacy insecurity negatively affects perceived usefulness and ease of use.

***H_{5a}**: Data privacy insecurity negatively affects perceived usefulness.*
***H_{5b}**: Data privacy insecurity negatively affects perceived ease of use.*

Perceived Usefulness

Perceived usefulness is the extent to which individuals assume that using technology will improve their performance (Mukherjee et al., 2022). Kabir (2021) stated that perceived usefulness is a major factor in technology adoption. Perceived usefulness measures individual beliefs that technology can improve their performance. Individuals who think new technology produces or brings benefits will accept technology positively (Davis, 1989). Chen and Lin (2018) and McNamara et al. (2022) stated that perceived usefulness positively affects the intention to use.

***H_6**: Perceived usefulness has a positive effect on the intention to use.*

Perceived Ease of Use

Perceived ease of use is the extent to which individuals feel that technology will be easy to run so that there will be less work (Tahar et al., 2020). Perceived ease of use is related to individual beliefs that technology will be easy to run so that it can lighten work (Kabir, 2021). Easy to use refers to the simplicity of using a technology. According to Davis (1989), individuals who consider new technology easy to use will accept technology with a positive attitude. McNamara et al. (2022) and Chen and Lin (2018) stated that perceived ease of use positively affects intention to use.

***H_7**: Perceived ease of use has a positive effect on intention to use.*

Based on the theoretical framework and hypothesis, the research model is depicted in Figure 1.

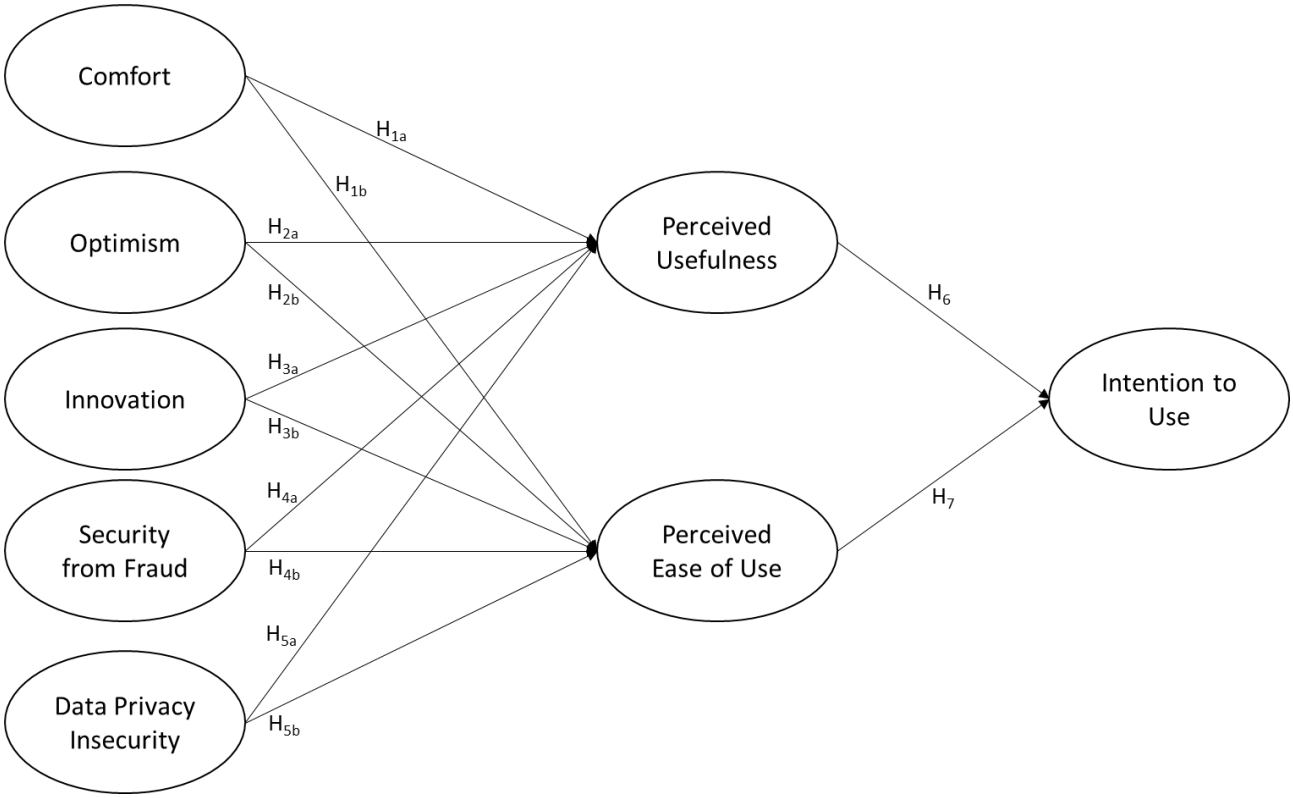

Figure 1 Research Model

Methodology

The population of this study included all employees in the Local Government Units (LGUs) of Yogyakarta Special Region. Purposive sampling was used to determine the sample with the criteria of employees in the LGU of Yogyakarta Special Region who operated applications related to financial administration. This study used primary data with data collection techniques using a questionnaire. The questionnaire was distributed directly to employees at the LGU of Yogyakarta Special Region. Before the questionnaire was distributed, a pilot test was conducted with five experts from the field of accounting information systems to test the accuracy of the question items with the research variables. In filling out the questionnaire, a Likert scale of 1-5 was employed (Hair et al., 2014).

According to Memon et al. (2020), researchers must determine the sample size through power analysis. Power analysis determines the minimum number of samples that can be used. In this study, power analysis was performed with G*Power 3.1.9.7 software. Based on testing, the minimum sample size of this study was 92 employees in the LGU of Yogyakarta Province. The questionnaire distribution was carried out from

September to October 2023. The questionnaires distributed were 663, while the questionnaires that could be processed were 295 or 45%. This figure met the minimum sample limit.

Intention to use is defined as an organization's positive or negative perception of a technology (Hashimy et al., 2023). These perceptions influence the organization to use the technology. According to McNamara et al. (2022), the main factors for individuals using technology are perceived usefulness and ease of use. While perceived usefulness is the extent to which individuals think using technology will improve their performance, perceived ease of use is the extent to which individuals find it easy or simple to run technology (Kabir, 2021). Furthermore, according to TRAM theory, internal factors within the individual will influence the individual's view of technology. Individuals with a positive attitude tend to accept technology easily. The internal factors referred to in TRAM theory include optimism, innovation, comfort, and safety.

Comfort is defined as a state of a person who feels physically, psychologically, and socially well. Optimism is an individual's positive attitude towards technology, including perceived control, flexibility, comfort, and efficiency (McNamara et al., 2022). Innovation is an individual trait that tends to be a pioneer and leader in both technology and thinking (Chen & Lin, 2018). In addition, security is the condition of a person free from all kinds of disturbances. The questionnaires of each variable were taken from research by McNamara et al. (2022), Mukherjee et al. (2022), Cimbaljević et al. (2023), and Kampa (2023).

Data analysis was then done using Partial Least Square (PLS) utilizing the SmartPLS version 4.0 software test tool. This study used PLS-SEM because of the exploratory research context. This data analysis technique allows for rejecting or supporting previous research results or theories (Hair et al., 2014). The stages of data analysis include Common Method Variance (CMV) test, descriptive statistical analysis, Confirmatory Tetrad Analysis (CTA) testing, convergent validity test, discriminant validity test, reliability test, coefficient of determination test, F-Square test, hypothesis testing, prediction test, and Standardized Root Mean Square Residual (SRMR) test.

Results and Discussions

Table 1 presents information on respondent characteristics. Most respondents were female, 56%. Most respondents were aged 20-35 years at 42.7%. In addition, most respondents based on the length of service in the current section were less than5 years or 60%. Because all LGUs in Yogyakarta Special Region 2021 recruited civil servants, most local government employees were new employees. Meanwhile, judging from the latest education, most LGU employees in Yogyakarta Special Region had a D3/S1 education of 73.22%. When viewed from an educational background, the majority of LGU employees in Yogyakarta Special Region had an accounting education background of 44.7%.

Common Method Variance (CMV)

To test the potential normative bias of the respondents in answering the questionnaire, a Common Method Variance test was conducted. Data is error-free if the CMV test result is less than 50% (Podsakoff et al., 2003). The CMV test results showed a figure of 45.32%, indicating that common method bias did not interfere with the results of this study. Common Method Variance testing was also carried out using marker variables (Podsakoff et al., 2003). A research model is free from Common Method Variance if there is no significant difference (less than 10%) between the R-Square value without marker variables and the R-Square value using marker variables, and the p-value of the model without and with marker variables does not change the conclusion. The results of CMV testing using marker variables are presented in Tables 8 and 10. The results of CMV testing using marker variables revealed no significant difference in R-Square value and no change in p-value in each hypothesis test result. Hence, it can be concluded that the model was free from common method bias. In other words, the results of this study can be trusted as a consideration in drawing conclusions and formulating practical implications.

Table 1 Respondent Characteristics Data

Criteria	Description	Total	%
Gender	Number of Respondent	295	100.00
	Male	88	29.83
	Female	164	55.59
	Not mentioned	43	14.57
Age	Number of Respondent	295	100.00
	20-35 years	126	42.71
	36-50 years	93	31.52
	>50 years	31	10.50
	Not mentioned	45	15.25
Education Level	Number of Respondent	295	100.00
	High School	50	16.94
	Diploma 1/diploma 2	1	0.33
	Diploma 3/bachelor	216	73.22
	Master	23	7.79
	Not mentioned	5	1.69
Educational Background	Number of Respondent	295	100
	Accounting	132	44.74
	Management	41	13.89
	Economy	21	7.11
	Others	68	23.05
	Not mentioned	33	11.18

Descriptive Statistical Analysis

The descriptive statistical analysis results in Table 2 show that the amount of data processed was 295. The innovation and security from fraud variables had a minimum value of 2, meaning respondents were highly concerned about innovative attitudes and security from fraud compared to other variables in the study. Since all variables had an average value between 2 and 3.99, all variables had moderate descriptive statistics (Alach, 2017).

Table 2 Descriptive Statistics

Variables	Min	Max	Mean	Std. Deviation
Comfort	1.00	5.00	3.71	0.66
Optimism	1.00	5.00	3.60	0.55
Innovation	2.00	5.00	3.51	0.56
Security from Fraud	2.00	5.00	3.64	0.55
Data Privacy Insecurity	1.00	5.00	3.09	0.68
Perceived Usefulness	1.00	5.00	3.77	0.61
Perceived Ease of Use	1.00	5.00	3.55	0.60
Intention to Use	1.00	5.00	3.45	0.59

Confirmatory Tetrad Analysis (CTA)

A Confirmatory Tetrad Analysis (CTA) test is conducted to ascertain whether the PLS analysis will use a reflective or formative approach (Hair et al., 2019). Based on Confirmatory Tetrad Analysis testing, it was uncovered that, in general, all constructs had a p-value more than alpha 0.05. Therefore, it can be concluded that the measurement model of this study was reflective.

Convergent Validity

A variable is said to have good convergent validity if it has an Average Variance Extracted (AVE) value more than alpha 0.5 and an outer loadings value more than 0.5 (Hair et al., 2014).

Table 3 Outer Loading and AVE

Code	Outer Loading	AVE
Comfort		
Employees are comfortable working with blockchain technology.	0.935	0.829
Employees are comfortable making decisions using blockchain technology.	0.935	
Employees think blockchain technology can increase the speed of AIS.	0.859	
Optimism		
Employees believe blockchain technology can increase the accuracy of AIS.	0.885	0.731
Employees believe blockchain technology provides more accurate information.	0.905	
Employees believe blockchain technology provides optimized analytics.	0.906	
Employees believe blockchain technology registries increase transparency.	0.856	
Innovation		
Employees are continuously updated on technological developments.	0.856	0.731
Employees enjoy using advanced technology.	0.854	
Safety from Fraud		
Blockchain technology is more transparent than servers.	0.794	0.789
Blockchain technology is more effective in information retrieval.	0.889	
Blockchain technology makes coordination easier.	0.839	
Blockchain technology is non-erasable, so it supports transparency.	0.548	
Blockchain technology is more efficient in information retrieval.	0.884	
Data Privacy Insecurity		
Employees doubt the safety of data privacy leaks.	0.768	0.758
Employees care about data privacy and security.	0.641	
Employees are worried about LGU privacy data being shared if they use blockchain technology.	0.743	
Employees doubt accounting information is shared on target.	0.823	
Perceived Usefulness		
Blockchain technology helps collect financial transaction data in LGU.	0.866	0.845
Blockchain technology will boost AIS's productivity.	0.917	
Blockchain technology will improve the effectiveness of AIS.	0.942	
Blockchain technology will improve AIS's efficiency.	0.951	
Perceived Ease of Use		
Blockchain technology is compatible with AIS.	0.863	0.641
Features of blockchain technology are easy to use.	0.862	
Working with blockchain technology will be easy.	0.890	
Compared to server AIS, blockchain AIS is easier.	0.867	
Intention to Use		
LGU will use blockchain technology in the future.	0.825	0.558
LGU will use blockchain technology shortly.	0.827	
Employees expect LGU to use blockchain technology.	0.890	
LGU employees feel comfortable with the use of blockchain AIS.	0.877	

In this study, indicators IN1 and OP4 had an outer loading value less than 0.5 or invalid, so they were removed. After removing the indicators, all indicators had an outer loading value more than 0.5 and an AVE value more than 0.5. As such, it can be concluded that all indicators were valid.

Discriminant Validity

Next, a discriminant validity test was carried out where the data is said to be valid if the root AVE value of each construct must be higher than the highest squared correlation with other constructs (Hair et al., 2014).

Table 4 Discriminant Validity Test Result (Fornell-Lacker Values)

	C	IN	ITU	OP	PEOU	PU	SF	SP
C	0.910							
IN	0.459	0.855						
ITU	0.630	0.363	0.855					
OP	0.862	0.453	0.606	0.888				
PEOU	0.711	0.479	0.626	0.698	0.871			
PU	0.746	0.390	0.550	0.813	0.747	0.919		
SF	0.773	0.457	0.603	0.840	0.733	0.766	0.801	
SP	0.251	0.158	0.104	0.206	0.232	0.171	0.204	0.747

Note: C = Comfort; IN = Innovation; ITU = Intention to Use; OP = Optimism; PEOU = Perceived Easy to Use; PU = Perceived Usefulness; SF = Security from Fraud; SP = Data Privacy Security.

Discriminant validity can be also assessed by using cross-loading value that have to be higher than 0.6 (Hair et al., 2014). Based on the Fornell-Lacker (Table 4) and Cross-Loading (Table 5) values, it can be concluded that all variables met discriminant validity.

Table 5 Cross Loading Values

	C	IN	ITU	OP	PEOU	PU	SF	SP
C1	**0.935**	0.435	0.621	0.775	0.640	0.682	0.679	0.207
C2	**0.935**	0.424	0.631	0.781	0.682	0.673	0.691	0.268
C3	**0.859**	0.395	0.465	0.797	0.619	0.681	0.743	0.209
IN2	0.413	**0.856**	0.329	0.432	0.381	0.371	0.438	0.079
IN3	0.371	**0.854**	0.292	0.342	0.438	0.296	0.342	0.192
ITU1	0.581	0.303	**0.825**	0.562	0.550	0.526	0.544	0.127
ITU2	0.467	0.309	**0.827**	0.447	0.504	0.405	0.446	0.008
ITU3	0.563	0.332	**0.890**	0.547	0.553	0.497	0.523	0.141
ITU4	0.532	0.298	**0.877**	0.507	0.527	0.440	0.540	0.068
OP1	0.804	0.371	0.568	**0.885**	0.598	0.675	0.707	0.252
OP2	0.778	0.427	0.487	**0.905**	0.624	0.735	0.772	0.177
OP3	0.751	0.425	0.543	**0.906**	0.659	0.737	0.789	0.178
OP5	0.732	0.384	0.559	**0.856**	0.598	0.739	0.714	0.131
PEOU1	0.688	0.361	0.587	0.688	**0.863**	0.750	0.672	0.218
PEOU2	0.577	0.471	0.471	0.540	**0.861**	0.546	0.585	0.196
PEOU3	0.590	0.446	0.514	0.623	**0.890**	0.666	0.667	0.171
PEOU4	0.615	0.399	0.599	0.569	**0.867**	0.624	0.623	0.221
PU1	0.721	0.330	0.513	0.781	0.656	**0.866**	0.751	0.162
PU2	0.686	0.325	0.544	0.719	0.662	**0.917**	0.657	0.176
PU3	0.657	0.399	0.469	0.744	0.708	**0.942**	0.707	0.114
PU4	0.673	0.381	0.496	0.739	0.718	**0.951**	0.696	0.174
SF1	0.598	0.372	0.488	0.651	0.593	0.609	**0.794**	0.207
SF2	0.720	0.395	0.532	0.794	0.635	0.707	**0.889**	0.201
SF3	0.668	0.398	0.523	0.737	0.652	0.665	**0.839**	0.190
SF4	0.316	0.202	0.309	0.323	0.384	0.314	**0.548**	-0.031
SF5	0.703	0.417	0.522	0.750	0.628	0.685	**0.884**	0.178
SP1	0.137	0.109	0.090	0.071	0.180	0.071	0.066	**0.768**

Table 6 Cross Loading Values (Cont.)

	C	IN	ITU	OP	PEOU	PU	SF	SP
SP2	0.232	0.257	-0.012	0.215	0.185	0.157	0.252	**0.641**
SP3	0.182	0.012	0.126	0.101	0.150	0.079	0.107	**0.743**
SP4	0.180	0.056	0.124	0.191	0.167	0.173	0.148	**0.823**

Reliability

A variable is said to be reliable if the Composite Reliability and Cronbach's alpha values are more significant than 0.6 (Hair et al., 2014). The reliability test results demonstrated that the Cronbach's Alpha and Composite Reliability values were more than 0.6 (Table 6). Therefore, it can be concluded that all variables were reliable.

Table 6 Cronbach's Alpha and Composite Reliability Test Result

	Cronbach's Alpha	Composite Reliability
C	0.896	0.897
OP	0.911	0.912
IN	0.632	0.632
SF	0.854	0.885
SP	0.735	0.735
PU	0.939	0.938
PEOU	0.894	0.895
IU	0.877	0.880

Note: C = Comfort; IN = Innovation; ITU = Intention to Use; OP = Optimism; PEOU = Perceived Easy to Use; PU = Perceived Usefulness; SF = Security from Fraud; SP = Data Privacy Security.

R-Square

From Table 7, the Adjusted R-Square value of the research model is in the range of 0.25 - 0.50, indicating that the research model has a low level of accuracy. The Adjusted R-Square value in the range of 0.50-0.75 denotes that the research model has a medium level of accuracy. Meanwhile, the Adjusted R-Square value in the range of more than 0.75 suggests that the research model has a high level of accuracy (Hair et al., 2014). Based on Table 8, it can be concluded that perceived usefulness and perceived ease of use had a moderate level of accuracy. Meanwhile, the intention to use had a weak level of accuracy.

Table 7 Adjusted R-Square

	Adjusted R-Square		Difference
	Without MV	With MV	
Perceived Usefulness	0.683	0.686	0.3%
Perceived Ease of Use	0.600	0.599	0.1%
Intention to Use	0.403	0.402	0.1%

Note: MV = Marker Variable

Prediction Test

A model is said to have a high level of prediction if the value of the PLS-SEM RMSE and MAE indicators less than linear regression model (LM). The model has a moderate level of prediction if the value of the PLS-SEM RMSE and MAE indicators ≥ linear regression model (LM) (Hair et al., 2019). Based on Table 8, the model had a high level of prediction because most of the PLSSEM_RMSE values were smaller than LM_RMSE.

Table 8 Prediction Test Result

	Q^2predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
ITU1	0.318	0.563	0.465	0.576	0.444
ITU2	0.218	0.620	0.479	0.604	0.484
ITU3	0.313	0.585	0.471	0.578	0.447
ITU4	0.298	0.570	0.469	0.554	0.434
PEOU1	0.491	0.468	0.351	0.470	0.327
PEOU2	0.388	0.554	0.422	0.571	0.419
PEOU3	0.449	0.518	0.382	0.547	0.391
PEOU4	0.421	0.548	0.398	0.552	0.392
PU1	0.625	0.404	0.281	0.415	0.279
PU2	0.515	0.466	0.297	0.496	0.323
PU3	0.556	0.453	0.294	0.469	0.311
PU4	0.547	0.432	0.284	0.459	0.306

Note: ITU = Intention to Use; OP = Optimism; PEOU = Perceived Easy to Use; PU = Perceived Usefulness

Standardized Root Mean Square Residual (SRMR)

Standardized Root Mean Square Residual (SRMR) is the difference between the observed and expected correlations. The research model is said to be as expected if the SRMR value is less than 0.10 (Henseler et al., 2014). In this study, the SRMR test results indicated that the research model is in accordance with the expected model.

Hypothesis Test

Table 9 shows the hypotheses test results. The hypothesis is supported if the t-statistic value higher than t-Table of 1.66, p-values less than alpha of 0.05 (5%), and the original sample variable is in line with the expected direction of the formulated hypothesis (Hair et al., 2014).

Table 9 Hypothesis Test Result

Hypothesis		β	T-statistic	p-values		Supported?
				Without MV	With MV	
C→PU	H_{1a}	0.131	1.731	0.042	0.043	Yes
C→PEOU	H_{1b}	0.299	3.622	0.000	0.000	Yes
OP→PU	H_{2a}	0.458	5.398	0.000	0.000	Yes
OP→PEOU	H_{2b}	0.025	0.251	0.401	0.374	No
IN→PU	H_{3a}	-0.008	0.155	0.439	0.424	No
IN→PEOU	H_{3b}	0.136	2.666	0.004	0.002	Yes
SF→PU	H_{4a}	0.264	3.120	0.001	0.001	Yes
SF→PEOU	H_{4b}	0.409	3.729	0.000	0.000	Yes
SP→PU	H_{5a}	-0.015	0.403	0.344	0.413	No
SP→PEOU	H_{5b}	0.047	1.122	0.131	0.110	No
PU→ITU	H_6	0.186	2.228	0.013	0.011	Yes
PEOU→ITU	H_7	0.488	6.057	0.000	0.000	Yes

Note: C = Comfort; IN = Innovation; ITU = Intention to Use; OP = Optimism; PEOU = Perceived Easy to Use; PU = Perceived Usefulness; SF = Security from Fraud; SP = Data Privacy Security.

Discussions

The test results of H1a and H1b revealed that comfort positively affected perceived usefulness and ease of use. This result is consistent with Igbaria et al. (1994) and McNamara et al. (2022). These results indicate that employees comfortable with blockchain technology in AIS will tend to find the technology valuable and easy to use. Furthermore, according to McNamara et al. (2022), the comfort aspect can accelerate employees'

switch to new technology. Therefore, establishing and further developing the blockchain concept in AIS must consider the comfort aspect. Consequently, employees in the LGU of Yogyakarta Special Region will trust AIS's blockchain technology highly.

The results of the H2a test showed that optimism had a positive effect on perceived usefulness. This result aligns with McNamara et al. (2022) and Chen and Lin (2018). According to Chen and Lin (2018), optimistic employees will focus on the positives of technology. Thus, employees will tend to focus on the benefits offered compared to the shortcomings of a new technology. The results of this study indicate that employees in the LGU of Yogyakarta Province are optimistic that blockchain technology can provide more benefits than server-based AIS.

Nevertheless, the results of the H2b test were not supported, which is in line with the research of McNamara et al. (2022). Optimistic employees believe that technology is under their control. However, this study found that optimism did not affect perceived ease of use. This is because the use of blockchain technology in Indonesia is still small. The use of blockchain technology in Indonesia has only been applied in the fields of taxation, archives, health records, and copyright data collection (Atmomintarso & Wirawan, 2021; Lukita, 2020; Noor, 2020; Rahardja, 2022). Therefore, since employees still felt unfamiliar with blockchain technology, the level of optimism was not related to the perception of ease. It is even possible that, due to unfamiliarity, employees were optimistic about blockchain but felt it was complicated.

The results of the H3a test demonstrated that innovation did not affect perceived usefulness. This result supports Chen and Lin's (2018) research. Meanwhile, H3b uncovered that innovation positively affected perceptions of ease of use. This result is in line with the research by Rafdinal and Senalasari (2021), Kampa (2023), and McNamara et al. (2022). Related to that, innovation is the tendency of individuals to be pioneers in the use of technology and in thinking about technology (Rafdinal & Senalasari, 2021). Innovative employees are ready to face new technological challenges by being willing to try new technologies (Chen & Lin, 2018). The results of this study suggest that innovative employees will be willing to use technology because they think it is easy to use. However, whether or not new technology is useful still depends on the design and function of the application rather than on the innovative attitude of the employee (Chen & Lin, 2018).

The test results of H4a and H4b unveiled that security from fraud positively affected perceived usefulness and ease of use. These results align with research by Rahmawati and Subardjo (2022) and Centobelli et al. (2022), stating that using blockchain technology can overcome fraud. Furthermore, according to Cimbaljević et al. (2023) and McNamara et al. (2022), security positively affects perceived usefulness and ease of use. Although blockchain technology is still new, it offers a security system for fraud. The security of new technology is an essential concern for users (Cimbaljević et al., 2023). Guaranteed security can impact the ability to work well and ensure transaction activities are carried out safely. The trust built by Yogyakarta Special Region LGU employees in security from fraud would bring positive thoughts that blockchain technology could improve their performance and is easy to use.

The test results of H5a and H5b exposed that data privacy insecurity did not affect perceived usefulness or ease of use. This is because there was a possibility that Yogyakarta Special Region LGU employees were less concerned about data privacy insecurity. In line with research by Samsor (2021), e-government implementation in developing countries has a weakness, i.e., the lack of user concern for data privacy security. It could be that LGU employees of Yogyakarta Special Region thought that whether or not blockchain technology is secure, it still has its uses and is easy to use. If this is true, this view needs to be changed because data privacy leaks can be misused for crimes that harm Yogyakarta Special Region LGU employees.

The results of test H6 exhibited that perceived usefulness positively affected the intention to use blockchain technology. These results corroborate with research conducted by Aripradono (2021), Chen and Lin (2018),

Kabir (2021), McNamara et al. (2022), and Kampa (2023). Although blockchain technology is new, many fields are already utilizing it. The advantages that blockchain technology provides in AIS, such as real-time updated data, fraud detection, timely information delivery, and increased effectiveness and efficiency (Falwadiya & Dhingra, 2022), have become a consideration for employees to adopt blockchain technology. The more benefits blockchain technology offers, the more likely Yogyakarta Special Region LGU employees will adopt blockchain technology.

The results of the H7 test indicated that the perception of ease of use positively affected the intention to use blockchain technology. The results of this study align with Aripradono (2021) and McNamara et al.'s (2022) research. Blockchain technology can ease the work with the effectiveness and efficiency of the AIS work process (Huy & Phuc, 2021). Blockchain technology can shorten the chain because all ledgers are distributed. In addition, blockchain technology can improve the quality of information, such as timeliness, reliability, and comparability. The benefits blockchain technology offers will ease employees' work in the LGU of Yogyakarta Special Region. This means that some work does not need to be done because it is automatically covered by blockchain technology. This increases the effectiveness and efficiency of Yogyakarta Special Region LGU employees because blockchain technology is easy to use (Huy & Phuc, 2021).

Theoretical Implications

The results of this study essentially confirm the Technology Readiness and Acceptance Model (TRAM) theory in the context of blockchain technology adoption in AIS in DIY local government. The critical variables are comfort, security from fraud, perceived usefulness, perceived ease of use, and intention to use. In other words, TRAM theory can be used in the context of blockchain technology adoption in AIS in local government. Nevertheless, future research is expected to develop TRAM theory with other variables. Furthermore, this study is weak because it was only conducted in Yogyakarta Special Region. It is hoped that future research can confirm this theory in the context of different regions.

Practical Implications

The results of this study provide input to the Ministry of Home Affairs and local governments to foster an optimistic attitude in employees as it affects perceived usefulness. In addition, when hiring new employees, innovative attitudes need to be considered. Innovative employees will see new technology as a challenge to grow. This will support the successful use of blockchain technology in AIS in government. Furthermore, the Ministry of Home Affairs and the Ministry of Communication and Information Technology need to work together to establish a blockchain-based AIS design that can increase security from fraud, given that this antecedent is also a critical factor for adopting blockchain technology in AIS in local governments.

Conclusion

This study aims to test and obtain empirical evidence regarding the readiness of employees in local governments to adopt blockchain technology in AIS. The research was conducted using a questionnaire survey technique and involved Yogyakarta Special Region LGU employees as respondents. Data analysis was then carried out using the PLS technique. The data analysis results showed that the variables influencing the perceived usefulness of blockchain technology in AIS in Yogyakarta Special Region consist of comfort, optimism, and security from fraud. The variables influencing the perception of ease of use of blockchain technology in AIS in Yogyakarta Special Region are comfort, innovation, and security from fraud. This study also revealed that perceived usefulness and ease of use positively affected the intention to use blockchain technology in AIS in Yogyakarta Special Region. This study's results can contribute to developing technology acceptance theory, especially the Technology Readiness and Acceptance Model (TRAM) theory, in the context of blockchain technology adoption in AIS in Yogyakarta Special Region. In addition, this research can provide input for the Ministry of Home Affairs, the Ministry of Communication and Information Technology, and local governments in preparing to adopt blockchain technology in Indonesia.

This study has limitations, such as the sample was only distributed in a small scope, namely LGU in Yogyakarta Special Region. In addition, because the research was conducted quantitatively, the results were not in-depth. As such, future research is expected to be conducted in other provinces throughout Indonesia to expand the results of this study. It is also recommended that further research be carried out using qualitative methods so that the results are more in-depth. Furthermore, this study involved employees at the Yogyakarta Special Region LGU as the research sample. This has the disadvantage that employees do not have the authority to make regulations regarding technology adoption. The results of this study were limited to things that need to be prepared at the subordinate level if blockchain technology in local government is implemented immediately. Therefore, future research should use regional heads or regulators as research samples to gain new insights from the perspective of public sector management.

References

Alach, Z. (2017). The use of performance measurement in universities. *International Journal of Public Sektor Management*, *30*(2), 102–117. https://doi.org/10.1108/IJPSM-05-2016-0089

ALSaqa, Z. H., Hussein, A. I., & Mahmood, S. M. (2019). The impact of blockchain on accounting information systems. *Journal of Information Technology Management*, *11*(3), 62–80. https://doi.org/10.22059/jitm.2019.74301

Anvar Kyzy, S., Dunn, G. J., & Sweeney, J. A. (2022). Chain and silk: alternative futures of blockchain governance in Kyrgyzstan. *European Journal of Futures Research*, *10*(5), 1–14. https://doi.org/10.1186/s40309-022-00192-9

Aripradono, H. W. (2021). Analisis Technology Readiness and Acceptance Model (TRAM) Pada Penggunaan Sport Wearable Technology. *Teknika*, *10*(1), 68–77. https://doi.org/10.34148/teknika.v10i1.330

Atmomintarso, B. E., & Wirawan, W. (2021). Sistem Pelaporan Pajak Pertambahan Nilai pada Web dengan Menggunakan Teknik Blockchain. *Jurnal Teknik ITS*, *10*(2), A175–A181. https://doi.org/10.12962/j23373539.v10i2.65827

Azizah, R. Z. H. (2020). Mendefinisikan Kembali Konsep Keamanan dalam Agenda Kebijakan Negara-Bangsa. *Jurnal Diplomasi Pertahanan*, *6*(3), 94–104. https://doi.org/10.33172/jdp.v6i3.666

Bhaskar, P., Tiwari, C. K., & Joshi, A. (2021). Blockchain in education management: present and future applications. *Interactive Technology and Smart Education*, *18*(1), 1–17. https://doi.org/10.1108/ITSE-07-2020-0102

Centobelli, P., Cerchione, R., Del Vecchio, P., Oropallo, E., & Secundo, G. (2022). Blockchain technology design in accounting: Game changer to tackle fraud or technological fairy tale? *Accounting, Auditing and Accountability Journal*, *35*(7), 1566–1597. https://doi.org/10.1108/AAAJ-10-2020-4994

Chen, M. F., & Lin, N. P. (2018). Incorporation of health consciousness into the technology readiness and acceptance model to predict app download and usage intentions. *Internet Research*, *28*(2), 351–373. https://doi.org/10.1108/IntR-03-2017-0099

Cimbaljević, M., Demirović Bajrami, D., Kovačić, S., Pavluković, V., Stankov, U., & Vujičić, M. (2023). Employees' technology adoption in the context of smart tourism development: the role of technological acceptance and technological readiness. *European Journal of Innovation Management*. https://doi.org/10.1108/EJIM-09-2022-0516

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

Derler, D., Samelin, K., Slamanig, D., & Striecks, C. (2019). Fine-Grained and Controlled Rewriting in Blockchains: Chameleon-Hashing Gone Attribute-Based. *Network and Distributed System Security Symposium*. https://doi.org/10.14722/ndss.2019.23066

Falwadiya, H., & Dhingra, S. (2022). Blockchain technology adoption in government organizations: a systematic literature review. *Journal of Global Operations and Strategic Sourcing*, *15*(3), 473–501. https://doi.org/10.1108/JGOSS-09-2021-0079

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

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, *26*(2), 106–121. https://doi.org/10.1108/EBR-10-2013-0128

Hashimy, L., Jain, G., & Grifell-Tatjé, E. (2023). Determinants of blockchain adoption as decentralized business model by Spanish firms–an innovation theory perspective. *Industrial Management & Data Systems*, *123*(1), 204-228. https://doi.org/10.1108/IMDS-01-2022-0030

Hasthoro, H. A. (2010). Kinerja Sistem Informasi Akuntansi pada Pemerintah Kabupaten dan Kota di Wilyah Provinsi Daerah Istimewa Yogyakarta. *EBBANK*, *1*(2), 105–120.

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., ... & Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organizational research methods*, *17*(2), 182-209.

Huy, P. Q., & Phuc, V. K. (2020). The impact of public sektor scorecard adoption on the effectiveness of accounting information systems towards the sustainable performance in public sektor. *Cogent Business and Management*, *7*(1), 1–23. https://doi.org/10.1080/23311975.2020.1717718

Huy, P. Q., & Phuc, V. K. (2021). Accounting Information Systems in Public Sektor towards Blockchain Technology Application: The Role of Accountants' Emotional Intelligence in the Digital Age. *Asian Journal of Law and Economics*, *12*(1), 73–94. https://doi.org/10.1515/ajle-2020-0052

Igbaria, M., Schiffman, S. J., & Wieckowski, T. J. (1994). The respective roles of perceived usefulness and perceived fun in the acceptance of microcomputer technology. *Behaviour & information technology*, *13*(6), 349-361. https://doi.org/10.1080/01449299408914616

Bandaso, T. I., Randa, F., & Mongan, F. F. A. (2022). Blockchain technology: bagaimana menghadapinya?–dalam perspektif akuntansi. *Accounting Profession Journal (APAJI)*, *4*(2), 97-115. https://doi.org/10.35593/apaji.v4i2.55

Jun, M. S. (2018). Blockchain government - A next form of infrastructure for the twenty-first century. *Journal of Open Innovation: Technology, Market, and Complexity*, *4*(1), 1–12. https://doi.org/10.1186/s40852-018-0086-3

Kabir, M. R. (2021). Behavioural intention to adopt blockchain for a transparent and effective taxing system. *Journal of Global Operations and Strategic Sourcing*, *14*(1), 170-201. https://doi.org/10.1108/JGOSS-08-2020-0050

Kampa, R. K. (2023). Combining technology readiness and acceptance model for investigating the acceptance of m-learning in higher education in India. *Asian Association of Open Universities Journal*. https://doi.org/10.1108/AAOUJ-10-2022-0149

Khan, S., Shael, M., Majdalawieh, M., Nizamuddin, N., & Nicho, M. (2022). Blockchain for Governments: The Case of the Dubai Government. *Sustainability*, *14*(11), 6576. https://doi.org/10.3390/su14116576

Kominfo. (2019). Pemerintah Bakal Implementasikan Teknologi Blockchain pada Aplikasi e-Government. *Berita Kominfo*. https://www.kominfo.go.id/content/detail/20929/pemerintah-bakal-implementasikan-teknologi-blockchain-pada-aplikasi-e-government/0/berita_satker

Kwilinski, A. (2019). Implementation of Blockchain Technology in Accounting Sphere. *Academy of Accounting and Financial Studies Journal*, *23*(2), 1–6.

Lara, J. E., Novaes, A. C., Afonso, B. P. D., & Tissot-Lara, T. A. (2022). Chinese technology: a study of the image and the desire for possession, using the technology readiness index – TRI scale. *International Journal of Innovation*, *10*(4), 638–665. https://doi.org/10.5585/iji.v10i4.21638

Lieny, L. (2021). Pengaruh Persepsi Kemudahan, Kenyamanan Dan Kepercayaan Terhadap Niat Dalam Menggunakan Mobile Banking Di Bca Pangkalpinang. *Jurnal Akuntansi Bisnis Dan Keuangan*, *8*(2), 56-62. https://e-jurnal.stie-ibek.ac.id/index.php/JABK/article/view/72

Lukita, C. (2020). Penerapan sistem pendataan hak cipta content menggunakan blockchain. *ADI Bisnis Digital Interdisiplin Jurnal*, *1*(2), 40-45.

Luthra, S., Janssen, M., Rana, N. P., Yadav, G., & Dwivedi, Y. K. (2023). Categorizing and relating implementation challenges for realizing blockchain applications in government. *Information Technology & People*, *36*(4), 1580-1602. https://doi.org/10.1108/ITP-08-2020-0600

McNamara, A. J., Shirowzhan, S., & M.E. Sepasgozar, S. (2022). Investigating the determents of intelligent construction contract adoption: a refinement of the technology readiness index to inform an integrated technology acceptance model. *Construction Innovation*, 1471–4175. https://doi.org/10.1108/CI-10-2021-0191

Memon, M. A., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample Size for Survey Research: Review and Recommendations. *Journal of Applied Structural Equation Modeling*, *4*(2), i–xx. https://doi.org/10.47263/jasem.4(2)01

Mukherjee, S., Baral, M. M., Lavanya, B. L., Nagariya, R., Singh Patel, B., & Chittipaka, V. (2023). Intentions to adopt the blockchain: investigation of the retail supply chain. *Management Decision*, *61*(5), 1320-1351. https://doi.org/10.1108/MD-03-2022-0369

Naeem, M., Jawaid, S. T., & Mustafa, S. (2022). Evolution of modified TAM associated with e-banking services adoption: a systematic PRISMA review from 1975 to 2021. *Journal of Modelling in Management*, 1746–5664. https://doi.org/10.1108/JM2-10-2021-0251

Noor, M. U. (2020). Implementasi Blockchain di Dunia Kearsipan: Peluang, Tantangan, Solusi atau Masalah Baru? *Khizanah Al-Hikmah : Jurnal Ilmu Perpustakaan, Informasi, Dan Kearsipan*, *8*(1), 86–96. https://doi.org/10.24252/kah.v8i1a9

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Pratiwi, L. L. (2022). Implementasi Blockchain Pada Akuntansi dan Audit di Indonesia. *Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan*, *4*(6), 2185–2203. https://doi.org/10.32670/fairvalue.v5i01.873

Rafdinal, W., & Senalasari, W. (2021). Predicting the adoption of mobile payment applications during the COVID-19 pandemic. *International Journal of Bank Marketing*, *39*(6), 984–1002. https://doi.org/10.1108/IJBM-10-2020-0532

Rahardja, U. (2022). Skema Catatan Kesehatan menggunakan Teknologi Blockchain dalam Pendidikan. *Jurnal MENTARI: Manajemen Pendidikan Dan Teknologi Informasi*, *1*(1), 29–37.

Rahmawati, M. I., & Subardjo, A. (2022). A Bibliometric Analysis of Accounting in the Blockchain Era. *Journal of Accounting and Investment*, *23*(1), 66–77. https://doi.org/10.18196/jai.v23i1.13302

Samsor, A. M. (2021). Challenges and Prospects of e-Government Implementation in Afghanistan. *International Trade, Politics and Development*, *5*(1), 51–70. https://doi.org/10.1108/itpd-01-2020-0001

Shin, D., & Ibahrine, M. (2020). The socio-technical assemblages of blockchain system: how blockchains are framed and how the framing reflects societal contexts. *Digital Policy, Regulation and Governance*, *22*(3), 245–263. https://doi.org/10.1108/DPRG-11-2019-0095

Tahar, A., Riyadh, H. A., Sofyani, H., & Purnomo, W. E. (2020). Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness. *Journal of Asian Finance, Economics and Business*, *7*(9), 537–547. https://doi.org/10.13106/JAFEB.2020.VOL7.NO9.537

Taherdoost, H. (2022). A critical review of blockchain acceptance models—blockchain technology adoption frameworks and applications. *Computers*, *11*(2), 24. https://doi.org/10.3390/computers11020024

Tiron-Tudor, A., Deliu, D., Farcane, N., & Dontu, A. (2021). Managing change with and through blockchain in accountancy organizations: a systematic literature review. *Journal of Organizational Change Management*, *34*(2), 477–506. https://doi.org/10.1108/JOCM-10-2020-0302

Verma, S., & Sheel, A. (2022). Blockchain for government organizations: past, present and future. *Journal of Global Operations and Strategic Sourcing*, *15*(3), 406–430. https://doi.org/10.1108/JGOSS-08-2021-0063

About the author(s)

Rizka Saniyatul Ummah (R.S.U.) is a student of Department of Accounting, Universitas Muhammadiyah Yogyakarta, Indonesia.

Hafiez Sofyani (H.S) is a lecturer at Department of Accounting, Universitas Muhammadiyah Yogyakarta, Indonesia. His research interest covers public sector accounting, Islamic accounting, and accounting information system, email address: hafiez.sofyani@umy.ac.id

Author(s) contributions

Conceptualisation, R.S.U. and H.S.; Methodology, R.S.U.; Investigation, R.S.U.; Analysis, R.S.U; Original draft preparation, R.S.U.; Review and editing, R.S.U.; Visualization, R.S.U.; Supervision, H.S.; Project administration, H.S.; Funding acquisition, H.S.

Conflicts of interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.