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EVALUATION OF BLOCKCHAIN TECHNOLOGY ACCEPTANCE FACTORS IN THE TOKOCRYPTO APPLICATION

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ABSTRACT

The development of the internet which is growing rapidly at this time has given rise to various recent technologies in the world, one of which is cryptocurrency. The total level of cryptocurrency ownership globally averages 3.9 percent out of 300 million crypto users in the world. Additionally, an estimated 18,000 businesses have opened to accept cryptocurrency as payment. However, the increasing popularity of cryptocurrencies also raises questions about financial risks in various countries including Indonesia. The Indonesian Financial Services Authority (OJK) prohibits financial service institutions ranging from banking, and insurance, to finance to facilitating cryptocurrencies. Although not as a means of payment. However, cryptocurrencies can be included as commodities that can be used only on futures exchanges and the public can buy cryptocurrency assets through any trade registered with BAPPEBTI. Tokocrypto is the first crypto asset trader listed with BAPPEBTI. However, the Tokocrypto application rating is still considered unsatisfactory. Based on Ratings and Reviews on the Tokocrypto application, the lack of satisfaction in investing in cryptocurrency assets through the Tokocrypto application is caused by the inadequate quality of the application. The purpose of this research is to find out and identify what factors are one of the reasons for user acceptance in investing in cryptocurrency assets through the Tokocrypto application. The research was conducted by distributing questionnaires to 398 respondents and processing the data that had been collected by analyzing the data using the PLS-SEM method and getting the results that cyber security, habit, trust, social influence did not have a significant impact on intention to use. On the other hand, the influence of government regulations, information quality, and system quality on intention to use, and intention to use on usage behavior has a significant positive impact.

Keywords: *Blockchain, Cryptocurrency, SmartPLS*

1. INTRODUCTION

1.1 Cryptocurrency Global Trends

The development of the internet which is growing rapidly at this time has given rise to various recent technologies in the world, one of which is cryptocurrency. Cryptocurrencies are digital currencies that are protected by encryption, making counterfeiting or double spending impossible. The cryptocurrency market consists of the sale of digital or virtual currency by entities (organizations, sole traders, and partnerships) that operate independently of the central bank and use encryption techniques to regulate the formation of their units and verify the transfer of payments. This system is built on a decentralized network namely Blockchain technology [1].

By 2021, Indian Express Limited estimates that the total ownership rate on a global scale will average 3.9 percent, out of a total of 300 million crypto users in the world. Additionally, an estimated 18,000 businesses have opened to accept cryptocurrency as payment. This number is a 300% increase compared to some crypto holdings in Q3 [2].

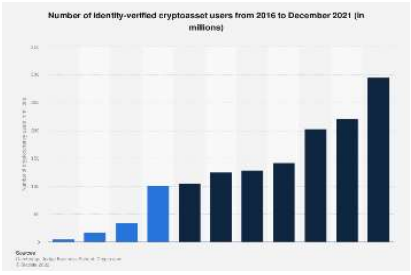

Figure 1: Number of Identity Verified Cryptocurrency Asset Users

1.2 Trend Of Cryptocurrency In Indonesia

The popularity of cryptocurrencies continues to increase (figure 2) and even Indonesia is also one of the highest cryptocurrency users in the world. Based on a data survey conducted by Finder in December 2021, Indonesia is ranked 4th as the most user of currency from 27 countries. The survey was conducted on 2,502 internet users in Indonesia, 22.4 percent using cryptocurrencies [3]. As of July 22, 2022, the number of crypto asset investors in Indonesia has reached 15.57 million people with the number of transactions reaching up to IDR 232.45 trillion.

Figure 2: Countries with the Highest Crypto Ownership

However, the increasing popularity of cryptocurrencies has also raised concerns about financial stability risks. The Indonesian Financial Services Authority (OJK) prohibits financial service institutions ranging from banking, insurance, to finance to facilitating cryptocurrencies.

Although prohibited as a means of payment. However, cryptocurrencies can be included as commodities that can be traded on futures exchanges. Cryptocurrency assets have been regulated by the Minister of Trade Regulation by including crypto assets as commodities traded on futures exchanges under the supervision of Badan Pengawas Perdagangan Berjangka Komoditi (BAPPEBTI) which is the supervisor of commodity futures trading in Indonesia.

Based on BAPPEBTI, the applicable cryptocurrency regulations in Indonesia are:

a) Bappebti Regulation No. 5 (2019)
Bappebti identifies cryptocurrencies as commodities and establishes regulatory requirements for cryptocurrency exchanges in Indonesia.
b) Bappebti Regulation No. 11 (2022)
Bappebti published a list of 383 cryptocurrency assets that can be legally used on exchanges.

Even so, investing in cryptocurrency assets is still considered a high-risk investment [4], This is because:

a) There is nothing fundamental to analyze. The medium of exchange is only cryptography-based without investment asset guarantees.
b) The price of cryptocurrency assets can go up and down drastically according to supply and demand.
c) There is no authority that established legal regulations that can restrict transactions because all transactions are controlled by Blockchain technology.
d) There is no investor protection or customer service that handles investor complaints related to fluctuations in investment value.

1.3 Profile Of Challenges Faced By The Company

However, due to the legal position of cryptocurrency in Indonesia, the public can only buy cryptocurrency assets through any trading application registered with BAPPEBTI. Platforms that bridge transactions between crypto assets and investors are called Crypto Currency Exchange Applications. Where each cryptocurrency exchange application offers different facilities and competes to provide the best platform to serve users. Starting from the features, user experience, and visualization, to the level of security.

Tokocrypto is the first crypto asset trader registered with BAPPEBTI and the largest in Indonesia in terms of transaction volume. Tokocrypto offers crypto asset trading transactions with the support of a secure system, 200+ pairings with various other assets, including IDR, and high liquidity. Currently, Tokocrypto is in the first

position as a Prospective Crypto Asset Trader with the highest transaction value reaching up to Rp 95 trillion. And currently, the number of investors in Tokocrypto is more than 2.7 million investors.

In November 2020, Tokocrypto launched an application based on Android and iOS to make it easier for customers to buy and sell assets anytime and anywhere. As of December 2021, the Tokocrypto application has been downloaded 2 million times [5].

High ratings and reviews are the most important things to increase the business rating in the application. The higher the ranking of your business, the greater the chance of getting more customers. However, the rating of the Tokocrypto application is still not satisfactory enough. Based on Ratings and Reviews on the Tokocrypto application, it can be concluded that the lack of user satisfaction in investing in cryptocurrency assets through the Tokocrypto application is caused by poor application quality. This can be seen from application users giving a 1-star rating and reviewing that the application has a bad layout and user interface, is not user-friendly, has many bugs, and performance of the application is unbelievably bad. So, some of them choose to uninstall the Tokocrypto application.

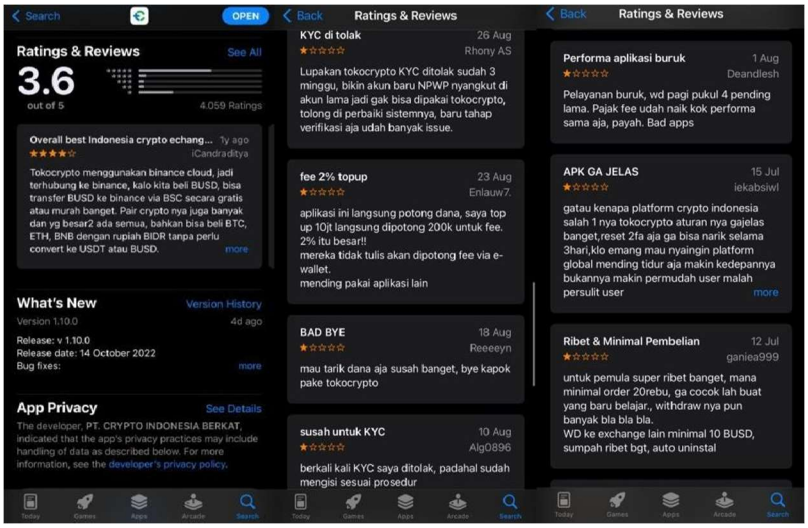

Figure 3: Ratings & Reviews Tokocrypto Application

1.4 Expectation Of The Case Study

However, seeing user acceptance based on the reviews given is not enough, but related research must be carried out so that it can be seen clearly what are the factors that affect user acceptance of cryptocurrency investors on the Tokocrypto application because as a platform that provides considerable risk investments, the platform needs to understand user opinions and adoption intentions regarding cryptocurrency exchange applications.

Therefore, this research's purpose is to find out and identify what factors are one of the reasons for user acceptance in investing in cryptocurrency assets through the Tokocrypto application. The results of the research conducted are expected to be a reference for start-ups to be able to use crucial factors in the hope of being successful in developing similar applications that are currently popular.

2. LITERATURE REVIEW

2.1 Blockchain Technology

Blockchain is an emerging trend in technology that affects businesses and society. Blockchain technology has been used successfully in various fields, which include financial services, public administration, supply chain management, healthcare, and many others [6].

Blockchain is a type of distributed ledger technology consisting of an ever-growing list of records, called blocks, that are securely linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data (represented as a Merkle tree, where data nodes are represented by leaves). The timestamp proves that the transaction data existed when the block was created. Since each block contains information about the previous

block, they effectively form a chain (compare linked list data structures), with each additional block linked to the previous block. As a result, blockchain transactions are immutable because, once recorded, the data in any block cannot be changed retroactively without changing all subsequent blocks [7].

On a technical level, Blockchain can be defined as an immutable ledger for recording transactions, maintained in a distributed network of distrusting peers. Each associate maintains a copy of the ledger. Peers run a consensus protocol to validate transactions, group them into blocks, and build hash chains on top of blocks. This process establishes the general ledger by ordering transactions as needed for consistency. Blockchain has emerged with Bitcoin and is widely regarded as a promising technology for running trusted exchanges in the digital world [8].

2.1.1 Blockchain advantages

There are several advantages when using blockchain technology, including the following:

a) Immutability
Blockchain supports immutability, meaning that it is not possible to delete or replace recorded data. Therefore, Blockchain prevents data tampering in the network [9].

b) Transparency
All computers connected to the same network must have a copy of every transaction in the Blockchain. Change cannot be done easily because it must use consensus and be disseminated throughout the network at the same time. It is therefore exceedingly difficult to commit a change or other fraud and potentially reduce or eliminate reconciliation costs [10]. The transparency process occurs in the process of distributing copies of each transaction when transactions are copied to other computers in a network. When each user can see all existing transactions, it also shows that transparency has occurred [11].

c) Cryptography
Cryptography in Blockchain ensures authentication and verifiable transactions. Blockchain design includes this imperative because it focuses on assuming computational brute force and making encryption more difficult for adversaries to crack [8].

d) Consensus and Proof of Work
The public blockchain gives the right for every user who accesses it to make consensus on the blockchain, unlike the private blockchain because not all users can do it and only those who are given the responsibility can do it. Consensus serves to create a sequence to ensure that each transaction is validated. The goal of consensus is to protect Blockchain data from fraud or spam [12].

2.1.2 Blockchain disadvantages

Apart from having advantages, the use of blockchain also has some disadvantages.

a) Data Modification
Blockchain technology does not allow easy modification of data after it has been recorded, and requires rewriting code across all blocks, which is time-consuming and expensive. The downside of this feature is that it is difficult to correct errors or make the necessary adjustments.

b) Changes in behavior
Change will always happen, but with the advent of Blockchain, tremendous changes are inevitable. Rejection from various parties will occur, a change in perspective from trust to third parties to store data will be transferred in the Blockchain, making users adapt to this technology. Various companies will also begin to be affected, such as credit cards which may also be able to switch platforms using Blockchain.

c) Speed & Performance
Blockchain is much slower than traditional databases because Blockchain technology performs more operations. First, it performs signature verification, which involves cryptographically signing transactions. Blockchain also relies on a consensus mechanism to validate transactions. Some consensus mechanisms, such as proof of work, have low output transactions. Finally, there is redundancy, where the network requires that each node plays a significant role in verifying and storing every transaction [9].

d) High Implementation
Blockchain cost is more expensive compared to traditional databases. In addition, businesses need proper planning

and execution to integrate blockchain into their processes.

2.2 Bitcoin: World's First Cryptocurrency

Bitcoin is the first application of Blockchain technology. Although it is a currency transaction protocol, this application is useful for understanding Blockchain as a whole [13].

2.2.1 What's bitcoin

Bitcoin is a virtual currency built using cryptographic principles and composed of Blockchain and proof-of-work mechanisms in a distributed and decentralized environment; hence it is also called cryptocurrency. Despite proposals in the literature to develop a similar currency using cryptographic techniques, it remains the first cryptocurrency to be implemented in the world. In solving the problem of double spending using a distributed ledger, Nakamoto presented a process of virtual money transfer that was previously impossible. This ability of Bitcoin makes it unique and introduces a new branch of technology. This virtual currency, however, has more mystery. Bitcoin is called a virtual currency because it does not exist. We cannot touch or feel it even though it has real value. Bitcoin is the world's first cryptocurrency, proposed and developed by Satoshi Nakamoto between mid-2008 and early 2009. However, the invention of Bitcoin did not happen overnight; this virtual currency traces its origins almost three decades ago.

2.2.2 Token: BTC

Bitcoin, or BTC, is the native token for the Bitcoin protocol. The protocol is designed to generate Bitcoin tokens regularly until the year 2140. There will be no new Bitcoins on the network after that, but the protocol will continue to operate normally.

2.2.3 Units of bitcoin

There is an order to stipulate Bitcoin into smaller pieces. The smallest unit of Bitcoin that can be recorded on the blockchain is called a satoshi. This is one hundred millionths of one Bitcoin (0.00000001 BTC). This unit was used as a collection for the creator of Bitcoin, Satoshi Nakamoto.

The practice in the Bitcoin protocol is thatall amounts are denominated in satoshi before being displayed for display. The source code also uses satoshi when determining the amount of Bitcoin. When displaying very subtle Bitcoins, such as calculating a fee per byte or faucet, a satoshi is used to display the amount. Even though a satoshi is the smallest amount recorded in the blockchain, the payment channel may need to make incredibly detailed and payments in the mil satoshi currency, which is one hundred billionths of a Bitcoin.

The BTC unit was chosen to represent the value 108 to give subunit precision over large integers. Reflecting the SI system of units, it allows division of 1/10 (decibitcoin, BTC), 1/100 (centibitcoin, BTC), 1/1000 (millibitcoin, mBTC), and 1/1000000 (microbitcoin, BTC). Microbitcoins are also called bits. Between the bit and the satoshi, there is another unit, the Finney, which stands for 1/10000000 Bitcoin. It is called Computer programmer Hal Finney, the recipient of the first Bitcoin transaction. Table. 1 shows how the BTC unit is divided into smaller units.

Table 1: Bitcoin Units

Name	*Abbreviation*	*Decimal (BTC)*
Bitcoin	BTC	1
Decibitcoin	dBTC	0.1
Centibitcoin	cBTC	0.01
Millibitcoin	mBTC	0.001
Microbitcoin	µbitcoin	0.000001
Finney	—	0.0000001
Satoshi	Sat	0.00000001
Millisatoshi	Msat	0.00000000001

2.3 Unified Theory Of Acceptance & Use Of Technology

Unified Theory of Acceptance and Use of Technology (UTAUT) was developed in 2003 by Venkatesh to review and compare several acceptance models developed previously. A new model will be developed based on the models that have been studied previously. This model aims to see which variables affect the intentionand attitude to use (a system) and focuses on four variables namely: performance expectancy, effort expectancy, facilitating conditions, social influence.

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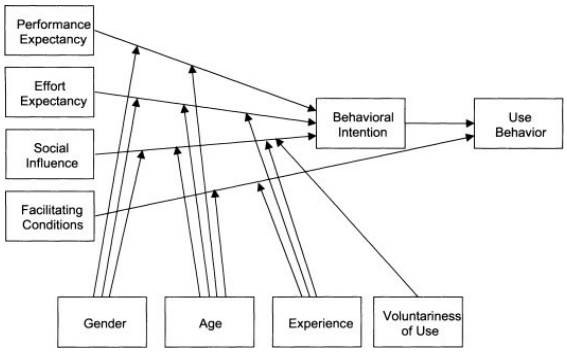

Figure 4: UTAUT Model

2.4 DeLone & McLean

The IS Success Model or information system success model by DeLone & McLean is a comprehensive review of various measures of the success of an information system which is summarized into a model that explains the relationship between the six categories of information system success variables. This model makes a huge contribution to measuring the success of an information system (IS Success) and has been widely cited, tested, and confirmed by researchers worldwide.

The DeLone & McLean model was then updated in 2008 after reviewing various reviews as well as empirical and conceptual literature published since the model was introduced from 1992 to 2007 [14].

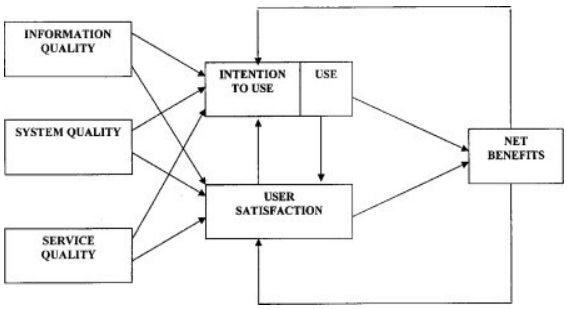

Figure 5: DeLone and McLean Model

2.5 Previous Studies

This study uses research methods based on previous research models which are widely used as guidelines in research models, namely the UTAUT 2 Model by Venkatesh et al., 2012 [15] and IS Success Model by Delone & Mclean, 2003 [16]. In addition, this research also has a unique novelty because it is supported by three previous research models that adopted acceptance of Blockchain technology, namely Trust, Government Regulation [17] dan Cyber Security [18].

3. RESEARCH MODEL

The research model used in this study is to combine the UTAUT model with the modified Delone and McLean model by adding three variables. The variables used in each model are as follows: the variables used in the UTAUT research model are Habit, Social Influence, and Use Behavior. Meanwhile, the Delone and McLean models are Information Quality, System Quality, and Intention to Use and with the addition of Government Regulation, Cyber Security, and Trust variables.

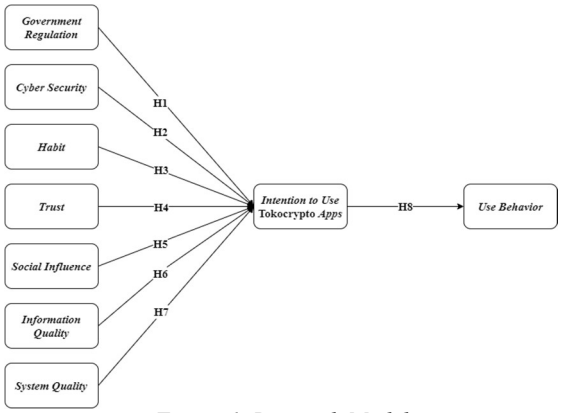

Figure 6: Research Model

The research model that will be used in the study has 9 variables, namely: Government Regulation, Cyber Security, Habit, Trust, Social Influence, Information Quality, System Quality, Intention to Use and Use Behavior. The following is an explanation of each research variable:

1. Government Regulation
   According to Bank Indonesia, cryptocurrencies or digital currencies are considered unfit to be used as legal tender in Indonesia in accordance with several laws that apply in the banking world [18]. Although, not as a means of payment. However, cryptocurrencies can be included as commodities that can be traded on futures exchanges. Crypto assets have been regulated by the Minister of Trade Regulation which includes crypto assets as commodities on futures exchanges under the supervision of the Commodity Futures Trading Regulatory Agency (BAPPEBTI).
2. Cyber Security
   This variable indicates the Tokocrypto application security system which aims to secure user information from criminal acts or cybercrime [18]. Even though crypto transactions are equipped with blockchain

technology which is overly complex and has high-security standards, extra security systems such as KYC can become a standard procedure to further increase trust with each other, especially between the platform and its users. If a platform guarantees the security of its transactions, users will put more trust. And thus, cyber security is considered able to influence people's intentions to invest in crypto through the Tokocrypto application.

3. Habit
   Habit is defined as the extent to which people tend to perform behaviors automatically [15]. This variable shows whether the habit of investing in cryptocurrency through the Tokocrypto application can affect user interest in using Tokocrypto.
4. Trust
   This factor refers to the success of the dynamic relationship between users and developers. In cryptocurrencies, trust refers to the extent to which users perceive cryptocurrencies as trustworthy in terms of security and privacy policies. The trust factor is an important thing in the use of technology because trust in third parties is very influential on the intention to use the system.
5. Social Influence
   Social Influence is defined as the extent to which an individual perceives that important others believe that he or she should use the new system [18]. The Tokocrypto application is a cryptocurrency trading application that was launched in 2020 and is a new application. Therefore, it is particularly important to give trust to users by introducing the Tokocrypto application along with all its interesting features that can be done through advertising media or word mouth systems. This social influence is predicted to affect the number of users' interest in investing in crypto through the Tokocrypto application.
6. Information Quality
   In addition to the quality of the system, not a few of Tokocrypto users gave reviews regarding the delivery of information that was considered very disappointing, starting from unsatisfactory customer service, the absence of information about the services provided, causing losses to users and the data verification process that took days. Based on the feedback given. Tokocrypto needs to do a deeper analysis of service quality. Therefore, a service quality variable is needed which aims to determine whether the quality of information provided by the Tokocrypto application can affect the user's intention to invest in cryptocurrency through the Tokocrypto application. This variable is an independent variable.
7. System Quality
   In the problem of introduction, it is explained that application users give a 1-star rating and even provide reviews that the application has a bad layout or user interface, is not user friendly, has many bugs, and the performance of the application is unbelievably bad. Therefore, we need a variable system quality. This variable aims to find out whether the quality of the Tokocrypto application can affect the user's intention to invest in crypto through the Tokocrypto application. This variable is an independent variable.
8. Intention to Use
   Intention to use refers to how much someone intends to use a technology [19]. In this study, intention to use is influenced by Government Regulation, Cyber Security, Habit, Trust, Social Influence, Information Quality, and System Quality.
9. Use Behavior
   Acceptance of a technology can be represented by the intensity of users in using a system or application, the level of use of a person's technology can be predicted from how often users use the application or system. This variable defines the actual measure of human behavior when using the application [20]. This variable explains the intensity of the people of DKI Jakarta in investing in cryptocurrency assets through the Tokocrypto application. In this study the use behavior variable is influenced by the Intention to Use variable because if someone has the intention to use an application, the intensity of the user in using the application will be considered especially important because the more often someone uses the application, the application is beneficial for the user so

that the application is judged. Successfully accepted by the user.

3.1 Data Sources

The design of the model consists of independent and dependent variables and because variables cannot be observed, the author creates several indicators for each variable which will later be used as a guide for questionnaires that will be distributed to respondents. Respondents involved in this study were users of the Tokocrypto application in DKI Jakarta, totaling 76,924 users with a random sampling technique carried out using the Solvin formula using an error tolerance of 5% so the results were 398 respondents. The questionnaire was measured on a Likert scale from 1 to 5 (1 = strongly disagree, 5 = strongly agree). The data collected will be processed and tested with measurement evaluation (outer model) and structural model evaluation (inner model).

Table 2: Questionnaire Design includes Variables and Indicators

Variable	Description	Code	Indicators
Government Regulation	The financial information system must be recognized by the government	GR1	I feel safe investing in cryptocurrency assets through the Tokocrypto application because it is officially registered at Bappebti
	Fintech applications are expected to have permission from the government so that the application can run for a long time	GR2	I am not worried about investing in cryptocurrency assets in the long term because the Tokocrypto platform is already registered with Bappebti
Cyber Security	A system that ensures the security of data and information for the owner of information from other people	CS1	I feel safe investing in cryptocurrency assets because it is equipped with blockchain technology which is overly complicated and has high-security standards
	A system that can identify and recognize account owners so that users can gain access rights to the system	CS2	Although cryptocurrency assets are equipped with blockchain technology which is overly complicated and has high-security standards. However, Tokocrypto provides a KYC feature that aims as an extra security system from the user's side, and I did not experience any difficulties during the KYC process on Tokocrypto
	A system that ensures the security of data and information for the owner of information from other people	CS3	I verify data easily and conveniently and I believe my data information will not be shared by Tokocrypto
	The system used must be able to maintain the confidentiality of user data	CS4	I have never had a personal data leak problem caused by using the Tokocrypto application
Trust	Trust refers to the level of comfort, confidence, and security that consumers have when using technology	TR1	I choose and entrust to invest in cryptocurrency assets through Tokocrypto
		TR2	Tokocrypto provides complete and trusted cryptocurrency assets
Habit	User habits in using the application	H1	I am used to investing in cryptocurrency assets through the Tokocrypto application
	Habits that result in the need to use the application	H2	I feel I must invest in cryptocurrency assets through the Tokocrypto application
	Use of applications that are user habits	H3	Investing in cryptocurrency assets through the Tokocrypto application has become a natural thing for me
Social Influence	User feelings after using information systems / information technology and want to recommend to others	SI1	I feel satisfied while investing in cryptocurrency assets through the Tokocrypto application and will recommend it to those closest to me
	Users use IS/IT based on the recommendations of the closest people	SI2	I invest in cryptocurrency assets through the Tokocrypto application because many people around me use it
	Users use IS/IT based on advertisements, social media, or other print media	SI3	I started investing in cryptocurrency assets through the Tokocrypto application after seeing advertisements, social media or print

Variable	Description	Code	Indicators
			media
Information Quality	How easily the information can be understood by users	IQ1	The information provided by Tokocrypto is quite easy to understand
	How accurate is the information generated by the application	IQ2	I get complete and harmless information from all features of Tokocrypto
	How consistent is the information displayed	IQ3	The information displayed by Tokocrypto is always consistent
System Quality	The length of time it takes for the system to respond to instructions from the user	SQ1	I have no difficulty investing in cryptocurrency assets through Tokocrypto because the response from the Tokocrypto application is very responsive
	The system is easy to use, well documented and uses modern technology that makes the system easier to use	SQ2	Tokocrypto really helped me in doing market research by providing various market information about cryptocurrency assets
		SQ3	Tokocrypto provides customizable features
Intention to Use	The desire to use something in the future	IU1	I intend to invest in cryptocurrency assets through the Tokocrypto application in the future
	Trying to use something	IU2	I will always try to invest in cryptocurrency assets through Tokocrypto
	Planning to use something	IU3	I plan to continue investing in cryptocurrency assets through the Tokocrypto application
Use Behavior	Dominants choose to use an application	UB1	I invest in cryptocurrency assets through the Tokocrypto application
	Frequency of using an application	UB2	I always invest in cryptocurrency assets through the Tokocrypto application
	Users use an application for daily activities	UB3	I invest cryptocurrency assets through the Tokocrypto application repeatedly

4. RESULT AND DISCUSSION

4.1 Respondents

Data collection in this study was done by distributing online questionnaires using Google Form Questionnaire media. The questionnaire distribution period starts on October 30, 2022 and ends on November 6, 2022. The total respondents collected were 457 respondents which were then adjusted to the research needs, namely those who answered "Yes" to the question "Have you ever heard of or used Blockchain technology?" namely as many as 400 respondents who were sorted again with the question "Have you ever heard of or invested in cryptocurrency?" that is as many as 398 respondents consisting of 264 men and 134 women, the majority of whom are of productive age (30-35 years) and most of them work as employees in DKI Jakarta. The sorting of these questions was intended so that the respondents obtained were in accordance with research needs and it could be concluded that 398 Tokocrypto respondents understood that the product offering (cryptocurrency) of the Tokocrypto application was supported by blockchain technology.

4.2 Modeling In SmartPLS

Further, modeling is done on SmartPLS, designed according to the model under study. The research model (Figure 7) consists of the variables Government Regulation (GR), Cyber Security (CS), Habit (H), Trust (T), Social Influence (SI), Information Quality (IQ), System Quality (SQ), Intention to Use (IU) and Use Behavior (UB). The hypothetical relationship is indicated by arrows between variables where each variable is followed by an indicator.

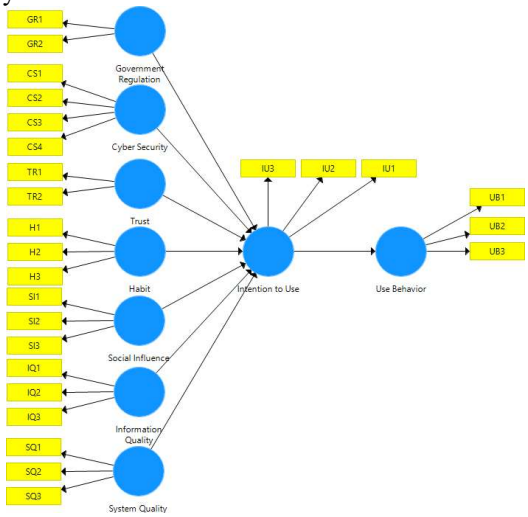

Figure 7: Modeling on SMARTPLS3

4.3 Measurement Model

The evaluation of the outer model is carried out by evaluating the validity test and evaluating the reliability test by using SmartPLS to evaluate the validity test, which can be seen from the Loading Factor and AVE (Average Variance Extracted) values, while the evaluation of the reliability test by looking at the Cronbach Alpha (CA) and Composite Reliability (CR) values.

4.3.1 Validity test

The validity test is carried out in two stages, namely the convergent validity and discriminant validity phases.

4.3.1.1 Convergent validity

Indicators that do not meet the conditions of convergent validity must be cleaned so that there are no values that do not meet the requirements. For outer loading, the value must meet the minimum requirements of 0.7 and above, and for AVE it must be at least 0.5 and above.

The first step to test the validity is to check the value of outer loadings, in Table 3 where the first test is carried out. It is found that there are values that do not meet the minimum requirements of 0.7, namely CS1 and the indicator will be deleted.

Table 3: First Outer Loading Value

	CS	GR	H	IQ	IU	SI	SQ	TR	UB	Description
CS1	0,619									Indicator Removed
CS2	0,762									
CS3	0,807									
CS4	0,753									
GR1		0,918								
GR2		0,916								
H1			0,852							
H2			0,877							
H3			0,846							
IQ1				0,828						
IQ2				0,876						
IQ3				0,821						
IU1					0,831					
IU2					0,878					
IU3					0,865					
SI1						0,815				
SI2						0,858				
SI3						0,840				
SQ1							0,854			
SQ2							0,826			
SQ3							0,845			
TR1								0,884		
TR2								0,882		
UB1									0,860	
UB2									0,876	
UB3									0,866	

After the CS1 indicator is removed, it is checked again on the outer loading value. Seen in Table 4, there are no more outer loading values that do not meet the requirements. Therefore, it can be carried out to the next testing stage.

Table 4: Outer Loading Value after CS1Indicator is removed

	CS	GR	H	IQ	IU	SI	SQ	TR	UB
CS2	0,778								
CS3	0,868								
CS4	0,761								
GR1		0,918							
GR2		0,916							
H1			0,852						
H2			0,877						
H3			0,846						
IQ1				0,828					
IQ2				0,876					
IQ3				0,821					
IU1					0,831				
IU2					0,878				
IU3					0,865				
SI1						0,815			
SI2						0,858			
SI3						0,840			
SQ1							0,854		
SQ2							0,826		
SQ3							0,845		
TR1								0,884	
TR2								0,882	
UB1									0,860
UB2									0,876
UB3									0,866

After obtaining the outer loading value in table 4, the researcher again looked for the AVE value of the existing variables. The minimum AVE score requirement to be accepted is 0.5 for each construct. In table 5 all variables have values greater than 0.5 so it can be concluded that the data is valid and can be continued back to the discriminant validity test.

Table 5: First AVE Value

	AVE	Status
CS	0,646	Valid
GR	0,841	Valid
H	0,737	Valid
IQ	0,709	Valid
IU	0,737	Valid
SI	0,702	Valid
SQ	0,708	Valid
TR	0,780	Valid
UB	0,752	Valid

4.3.1.2 Discriminant validity

Discriminant validity shows the extent to which a construct is completely different from other constructs [21]. The test is tested by checking the cross-loading value and the Fornell-Larcker Criterion. The value of cross-loadings is said to be eligible if an indicator has a construct outer loading value that is greater than the outer loading value of another construct. Likewise, with the Fornell-Larcker Criterion value. The correlation value between the indicator and the construct itself should not be smaller than the correlation with other constructs. If one of the two things happens, then the test is carried out again through the convergent validity stage.

Table 6 shows that all values in the first cross-loading have met the requirements. The correlation value of all indicators to the construct itself is greater than the correlation value of indicators to other constructs. Therefore, further testing can be carried out.

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Table 6: First Cross-Loadings Value

	CS	GR	H	IQ	IU	SI	SQ	TR	UB
CS2	**0,778**	0,378	0,457	0,489	0,416	0,415	0,430	0,484	0,370
CS3	**0,868**	0,437	0,520	0,499	0,502	0,486	0,472	0,471	0,401
CS4	**0,761**	0,469	0,415	0,434	0,469	0,507	0,522	0,414	0,421
GR1	0,484	**0,918**	0,491	0,486	0,554	0,539	0,571	0,500	0,515
GR2	0,496	**0,916**	0,484	0,487	0,550	0,517	0,596	0,539	0,516
H1	0,494	0,461	**0,852**	0,494	0,501	0,581	0,512	0,461	0,527
H2	0,472	0,434	**0,877**	0,511	0,519	0,540	0,465	0,478	0,519
H3	0,522	0,473	**0,846**	0,622	0,560	0,566	0,534	0,561	0,580
IQ1	0,495	0,448	0,558	**0,828**	0,602	0,544	0,555	0,518	0,537
IQ2	0,537	0,457	0,512	**0,876**	0,579	0,514	0,548	0,548	0,465
IQ3	0,453	0,433	0,533	**0,821**	0,552	0,552	0,536	0,496	0,465
IU1	0,467	0,496	0,527	0,579	**0,831**	0,561	0,561	0,547	0,602
IU2	0,497	0,513	0,517	0,581	**0,878**	0,566	0,570	0,511	0,621
IU3	0,522	0,539	0,538	0,608	**0,865**	0,566	0,607	0,573	0,635
SI1	0,507	0,543	0,543	0,612	0,582	**0,815**	0,625	0,588	0,593
SI2	0,475	0,432	0,488	0,471	0,504	**0,858**	0,531	0,516	0,479
SI3	0,485	0,461	0,607	0,506	0,558	**0,840**	0,551	0,517	0,577
SQ1	0,508	0,566	0,538	0,559	0,588	0,578	**0,854**	0,548	0,576
SQ2	0,439	0,519	0,469	0,498	0,514	0,538	**0,826**	0,539	0,593
SQ3	0,540	0,521	0,475	0,578	0,597	0,604	**0,845**	0,552	0,578
TR1	0,494	0,498	0,502	0,554	0,562	0,592	0,570	**0,884**	0,550
TR2	0,505	0,502	0,531	0,539	0,557	0,553	0,576	**0,882**	0,514
UB1	0,421	0,471	0,581	0,509	0,655	0,570	0,604	0,505	**0,860**
UB2	0,415	0,505	0,537	0,499	0,596	0,572	0,630	0,528	**0,876**
UB3	0,452	0,488	0,526	0,505	0,623	0,577	0,563	0,535	**0,866**

Table 7 shows that all scores on the first Fornell-Larcker criterion have met the requirements. The correlation value of all indicators to the construct itself is greater than the correlation value of indicators to other constructs. Therefore, further testing can be carried out.

Table 7: First Fornell-Larcker Criterion Value

	CS	GR	H	IQ	IU	SI	SQ	TR	UB
CS	**0.804**								
GR	0.534	**0.917**							
H	0.579	0.532	**0.859**						
IQ	0.589	0.530	0.635	**0.842**					
IU	0.578	0.602	0.615	0.687	**0.858**				
SI	0.586	0.576	0.655	0.637	0.657	**0.838**			
SQ	0.592	0.637	0.588	0.650	0.676	0.683	**0.842**		
TR	0.566	0.566	0.585	0.619	0.634	0.648	0.649	**0.883**	
UB	0.495	0.562	0.633	0.582	0.722	0.661	0.691	0.603	**0.867**

4.3.2 Reliability test

Reliability test is a reliability test to determine the extent to which the measuring instrument used can be trusted or reliable. This reliability test can be done with two measuring instruments, namely Cronbach's Alpha and composite reliability (CR). The criteria for Composite Reliability (CR) and Cronbach's alpha values greater than or equal to 0.7 means that the instrument is said to be reliable. In table 8, the test results show that the values of the two tests meet the requirements. Therefore, all variables can be said to be reliable.

Table 8: Cronbach's Alpha dan Composite Reliability Value

	Cronbach's Alpha	Composite Reliability	Status
CS	0.724	0.845	Reliable
GR	0.811	0.914	Reliable
H	0.822	0.894	Reliable
IQ	0.794	0.880	Reliable
IU	0.821	0.893	Reliable
SI	0.787	0.876	Reliable
SQ	0.795	0.879	Reliable
TR	0.718	0.876	Reliable
UB	0.835	0.901	Reliable

4.4 Structural Equation Model

Structural Equation Model (SEM) is a multivariate analysis technique combining factor analysis and regression (correlation).

The data obtained is said to be feasible to be tested in the inner model after all existing indicators have passed the validity and reliability test in the outer model. Furthermore, the inner model test process will include the coefficients of determination (R2), P-Value, and effect size (F2). The purpose of the inner model is to examine the relationship between variables that exist in a model, both between indicators and their constructs and relationships between constructs.

4.4.1 Coefficient of determinant (R^2)

Testing the coefficient of determination aims to determine how much the endogenous variable is influenced by other variables determined by the R2 criteria, namely: If the R2 result of 0.67 is considered good, 0.33 is considered moderate and 0.19 is considered weak.

After testing the coefficient of determination, the following results are obtained:

Table 9: R^2 Value

	R Square	Description
IU	0.623	Moderate
UB	0.521	Moderate

Table 9 shows the value of R2 on the 2 endogenous variables tested in this study. From the table, the two variables have moderate categories which can be detailed as follows:

1. Variable IU (Intention to Use) is influenced by 62.3% by variables GR (Government Regulation), CS (Cyber Security), H (Habit), TR (Trust), SI (Social Influence), IQ (Information Quality) and SQ (System Quality). In addition, there is still a 37.7% possibility that the IU construct is influenced by other constructs not mentioned in the model.
2. The variable UB (Use Behavior) is influenced by 52.1% by the variable IU (Intention to Use). However, there is still a 47.9% possibility that the UB construct is influenced by other constructs not mentioned in the model.

4.4.2 Effect size (F^2)

In addition to evaluating the R2 value of all endogenous constructs, the value of effect size (f2) is also used to evaluate whether when the exogenous variable is omitted it has a substantive impact on the endogenous variable. F2 values of 0.02, 0.15 and 0.35 can be interpreted whether the predictor of latent variables has a low, medium, or high influence on the structural level.

Table 10 shows the value of the effect size (f2) of each exogenous variable on the endogenous variable.

Table 10: F^2 Value

	IU	UB
CS	**0.004**	
GR	0.026	
H	**0.010**	
IQ	0.076	
IU		**1.088**
SI	**0.017**	
SQ	0.028	
TR	**0.016**	

Based on Table 10, the relationship that has the highest effect is the influence of intention to use (IU) on use behavior (UB) of 1,088 which can be said to be high.

Meanwhile, the effect size (f^2) of the relationship between system quality (SQ),

information quality (IQ) and government regulation (RG) on intention to use (IU) is considered moderate because it is above 0.15 and below 0.35. In addition, the relationship between constructs can be said to be weak or has no effect at all because it is below 0.02. These relationships include the relationship between social influence (SI) on intention to use (IU) of 0.017, trust (TR) of intention to use (IU) of 0.016 and habit (H) of intention to use (IU) of 0.010. The relationship between cyber security (CS) and intention to use (IU) is 0.004.

4.4.3 Q-Square (Q^2)

In addition to testing the R-square value, researchers must also look at the Q2 value. A Q-square value greater than 0 indicates that the model has predictive relevance, while a Q-square value less than 0 indicates that the model lacks predictive relevance [21].

Table 11 shows that all the Q^2 values of the constructs included in the endogenous variables in the research model have predictive relevance.

Table 11: Q^2 Value

	Q^2 (=1-SSE/SSO)
IU	0.442
UB	0.385

4.4.4 Path coefficient

Path Coefficient is the relationship between latent variables in the structural model [21], the estimated value for the path relationship in the structural model must be significant. This significant value can be obtained by bootstrapping procedure. In calculating the path coefficient, the path coefficient values in the range of -0.1 to 0.1 are considered insignificant. Values greater than 0.1 are considered significant and directly proportional, while values less than -0.1 are considered significant and inversely proportional [22].

Table 12: Value of Path Coefficient Between Variables

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values	Result
CS -> IU	0,057	0,895	0,371	Not Significant
GR -> IU	0,138	2,766	0,006	Significant
H -> IU	0,093	1,266	0,206	Not Significant
IQ -> IU	0,258	4,364	0,000	Significant
IU-> UB	0,722	18,746	0,000	Significant
SI -> IU	0,129	1,812	0,071	Not Significant
SQ-> IU	0,168	2,404	0,017	Significant
TR -> IU	0,117	1,845	0,066	Not Significant

Table 12 shows the resulting path coefficient values which can be detailed as follows:

1. The relationship between CS (Cyber Security) and IU (Intention to Use) variables has no significant effect. This relationship is obtained based on the value of T- Statistics which is less than 1.96 (0.895) and a p-value of more than 0.05 (0.371) and is strengthened by a coefficient value of less than 0.1 (0.057) which is considered not to meet the requirements.
2. The relationship between the GR (Government Regulation) variable and IU (Intention to Use) has a significant effect. This relationship is obtained based on the T- Statistics value which is more than 1.96 (2.766) and the P- Value is less than 0.05 (0.006) and is strengthened by a coefficient value of more than 0.1 (0.138) which is considered to meet the requirements.
3. The relationship between the variables H (Habit) and IU (Intention to Use) has no significant effect. This relationship is obtained based on the value of T-Statistics which is less than 1.96 (1.266) and a P- Value of more than 0.05 (0.206) and is strengthened by a coefficient value of less than 0.1 (0.093) which is considered not to meet the requirements.
4. The relationship between IQ (Information Quality) and IU (Intention to Use) variables has a significant effect. This relationship is obtained based on the T-Statistics value which is more than 1.96 (4.364) and the P- Value is less than 0.05 (0.000) and is strengthened by a

coefficient value of more than 0.1 (0.258) which is considered to meet the requirements.

5. The relationship between IU (Intention to Use) and UB (Use Behavior) variables has a significant effect. This relationship is obtained based on the T- Statistics value which is more than 1.96 (18.746) and the P- Value is less than 0.05 (0.000) and is strengthened by a coefficient value of more than 0.1 (0.722) which is considered to meet the requirements.
6. The relationship between SI (Social Influence) and IU (Intention to Use) variables has no significant effect. This relationship is obtained based on the value of T- Statistics which is less than 1.96 (1.812) and a P- Value of more than 0.05 (0.071) and is strengthened by a coefficient value of less than 0.1 (0.129) which is considered not to meet the requirements.
7. The relationship between SQ (Social Quality) and IU (Intention to Use) variables has a significant effect. This relationship is obtained based on the T- Statistics value which is more than 1.96 (2.404) and the P- Value is less than 0.05 (0.017) and is strengthened by a coefficient value of more than 0.1 (0.168) which is considered to meet the requirements.
8. The relationship between the variables TR (Trust) and IU (Intention to Use) has no significant effect. This relationship is obtained based on the T- Statistics value which is less than 1.96 (1.845) and the P- Value is more than 0.05 (0.066) even though the coefficient value is more than 0.1 (0.117). However, the relationship is deemed not to meet the requirements.

4.4.5 T- Statistics & P- Value

Next, bootstrapping was performed to evaluate the t-statistics and p-values. The value of T-Statistics can be said to be significant if the value is above 1.96 at a significant level of 5%. While the P- Value must be below 0.05 so that H0 can be rejected. In Table 13, the T- Statistics and P-Values in this study show several insignificant relationships which are then discussed in each hypothesis.

Table 13: Value of Path Coefficient Between Variables

	Original Sample (O)	Sample Mean (M)	T Statistics (|O/STDEV|)	P Values	Result
CS - IU	0.057	0.058	0.884	0.377	Rejected
GR - IU	0.138	0.138	2.653	0.008	Approved
H - IU	0.093	0.094	1.293	0.197	Rejected
IQ - IU	0.258	0.255	4.251	0.000	Approved
IU - UB	0.722	0.721	18.164	0.000	Approved
SI - IU	0.129	0.127	1.923	0.055	Rejected
SQ - IU	0.168	0.168	2.423	0.016	Approved
TR - IU	0.117	0.120	1.898	0.058	Rejected

4.5 Hypothesis

H1: Government Regulation (GR) → Intention to Use (IU)

Evaluation of the model structure in table 13 shows that the direction of the path relationship between the GR coefficient and IU shows a positive direction because it is above 0.1 (0.138). The T- Statistics value of this relationship is above 1.97 (2.653) and the P- Value is below the error level of 0.05 (0.008). So, this relationship shows a significant effect, so H1 is accepted. This identifies that government regulation affects positively and is a factor that triggers users' intention to use to invest in cryptocurrency assets through the Tokocrypto application.

H2: Cyber Security (CS) → Intention to Use (IU)

The direction of the relationship between the CS coefficient path to IU shows a negative direction because it is below 0.1 (0.05) which is strengthened because the T- Statistics value is still below 1.97 (0.884) and the P- Value which is still above the error level of 0.05 (0.058), then this relationship does not show a significant effect so that H2 is rejected. This identifies that cyber security (CS) does not affect positively and is not a factor that triggers the intention to use (IU) of users to

invest in cryptocurrency assets through the Tokocrypto application.

H3: Habit (H) → Intention to Use (IU)
The direction of the path relationship between the coefficients of H to IU shows a negative direction because it is below 0.1 (0.093) which is strengthened because the T- Statistics value is still below 1.97 (1.293) and the P- Value which is still above the error level of 0.05 (0.197), then this relationship does not show a significant effect so that H3 is rejected. This identifies that Habit (H) does not affect positively and is not a factor that triggers the intention to use (IU) of users to invest in cryptocurrency assets through the Tokocrypto application.

H4: Trust (TR) → Intention to Use (IU)
The direction of the path relationship between the coefficients of TR and IU shows a positive direction because it is above 0.1 (0.117). However, because the T- Statistics value is still below 1.97 (1.898) and the P- Value is still above the error rate of 0.05 (0.058), this relationship does not show a significant effect so H4 is rejected. This identifies that Trust (TR) does not affect positively and is not a factor that triggers the intention to use (IU) of users to invest in cryptocurrency assets through the Tokocrypto application.

H5: Social Influence (SI) → Intention to Use (IU)
The direction of the path relationship between the SI coefficients and the IU shows a positive direction because it is above 0.1 (0.129). However, the T- Statistics value of this relationship shows below 1.97 (1.923) and the P- Value is already below the error level of 0.05 (0.055). So, this relationship does not show a significant effect, so H5 is rejected. This identifies that social influence (SI) does not affect positively and is not a factor that triggers the intention to use (IU) of users to invest in cryptocurrency assets through the Tokocrypto application.

H6: Information Quality (IQ) → Intention to Use (IU)
The relationship direction between the IQ coefficient and IU shows a positive direction because it is above 0.1 (0.258). The T-Statistics value of this relationship is above 1.97 (4.251) and the P- Value is below the error level of 0.05 (0.000). So, this relationship shows a significant effect, so H6 is accepted. This identifies that information quality affects positively and is a factor that triggers users' intention to use to invest in cryptocurrency assets through the Tokocrypto application.

H7: System Quality (SQ) → Intention to Use (IU)
The direction of the path relationship between the coefficients of SQ and IU shows a positive direction because it is above 0.1 (0.168). This relationship's T- Statistics value shows it is above 1.97 (2.423) and the P-Value is below the error level of 0.05 (0.016). So, this relationship shows a significant effect, so H7 is accepted. This identifies that system quality affects positively and is a factor that triggers users' intention to use to invest in cryptocurrency assets through the Tokocrypto application.

H8: Intention to Use (IU) → Use Behavior (UB)
The direction of the path relationship between the IU and UB coefficients shows a positive direction because it is above 0.1 (0.722). This relationship's T- Statistics value shows it is above 1.97 (18.164) and the P-Value is below the error level of 0.05 (0.000). So, this relationship shows a significant effect, so H8 is accepted. This identifies that the intention to use positively affects and is a factor that triggers the use behavior of users to invest in cryptocurrency assets through the Tokocrypto application.

4.6 Managerial Implications

In table 14 it can be seen the results of the implications that occur based on the variables compiled by the author:

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Table 14: The Results of Managerial Implications

Variable Relations	Results Managerial Implications
Government Regulation → Intention to Use **(Significant)**	Investors/users of cryptocurrency assets intend to use the Tokocrypto application because it has been registered with Bappebti. Therefore, it is hoped that Tokocrypto can always follow the rules and regulations governing cryptocurrency assets that apply in Indonesia so that the permit is not revoked by Bappebti
Cyber Security → Intention to Use **(Not Significant)**	System security or cyber security has not been felt optimally by users. Therefore, cyber security capabilities are considered necessary to be developed properly so that they can meet the expectations of users.
Habit → Intention to Use **(Not Significant)**	User habits in accessing or transacting through the Tokocrypto application do not guarantee the user's intention to use the application. So, it is best to do market research about the appearance or features that attract users so that developers can meet the expectations of users who aim to improve user habits in accessing the Tokocrypto application.
Trust → Intention to Use **(Not Significant)**	User trust does not affect the user's intention to use the Tokocrypto application, which can be interpreted negatively, that is, user trust does not guarantee someone to invest in cryptocurrency assets through the Tokocrypto application. Therefore, it is necessary to increase user trust by presenting trusted cryptocurrency assets which are equipped with a system that makes it easier for users to submit user complaints that Tokocrypto hopes can develop the latest innovations obtained from the feedback provided.
Social Influence → Intention to Use **(Not Significant)**	The influence of the closest people and even social media/advertisements do not affect the user's intention to use the Tokocrypto application. Therefore, it is necessary to have an approach taken by Tokocrypto which can be done by socializing the use of the Tokocrypto application or even holding workshops related to the use of the Tokocrypto application which is held by giving random giveaways or door prizes to attendees who have attended. This aims to make users more interested and intend to carry out cryptocurrency asset transactions through the Tokocrypto application.
Information Quality → Intention to Use **(Significant)**	The quality of the information will affect the user's intention to invest in cryptocurrency assets through Tokocrypto. but to keep users satisfied in using the Tokocrypto application it would be nice for employees to continue to provide quality information.
System Quality → Intention to Use **(Significant)**	System quality affects user intentions in investing cryptocurrency assets through Tokocrypto. That way, a good and proper system will encourage users to keep using the application, and vice versa.
Intention to Use → Use Behavior **(Significant)**	User intention affects the user's intensity in using the Tokocrypto application so that it can trigger user acceptance to invest in cryptocurrency assets through the Tokocrypto application because the more often users access the application, the application is considered useful for users. Therefore, Tokocrypto is expected to continue innovating to improve services.

5. CONCLUSION

This study aims to examine the analysis of the factors that influence user acceptance of cryptocurrency assets in the Tokocrypto application by distributing questionnaires to 398 respondents and processing the data that has been collected by testing the measurement evaluation (outer model) and structural model evaluation (inner model). And based on this evaluation it can be concluded that the factors influencing the acceptance of the Tokocrypto application are as follows:

1. The Government Regulation variable significantly affects Intention to Use in the Tokocrypto application.

2. The Information Quality variable significantly affects Intention to Use in the Tokocrypto application.
3. The System Quality variable significantly affects Intention to Use in the Tokocrypto application.
4. The Intention to Use variable significantly affects Use Behavior in the Tokocrypto application.

In addition, it was also found that the variable with the largest T-statistical value is the intention to use (IU) with a value of 18,164 which can be concluded that intention to use (IU) is the most key factor that most influences use behavior (UB) which is indicated by the acceptance of H8. It can be concluded that the intention of use affects the intensity of users in using the Tokocrypto application which triggers the acceptance of users to invest in cryptocurrency assets through the Tokocrypto application because the more often someone accesses the application or system, the system considered to provide benefits for its users.

There are several things related to the intention to use (IU) variable, which is influenced by 3 variables, namely:

1. Government Regulation (GR) as indicated by the receipt of H1
2. Information Quality (IQ) as indicated by the receipt of H6
3. System Quality (SQ) as indicated by the receipt of H7

And it can be concluded that the Tokocrypto application has been designed to make it easier for users to find information related to cryptocurrency assets because it is equipped with an excellent quality system that makes it easier for users to access and invest in cryptocurrency assets. In addition, users also feel safe and comfortable investing in cryptocurrency assets because Tokocrypto has been registered with Bappebti.

In addition, the results of the research conducted are expected to be a reference for start-ups to be able to use crucial factors that can be carried out in a strategy for the successful development of similar applications that are currently popular.

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