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Is Bitcoin Accepted in Indonesia ?

I Gusti Ngurah Agata Prisanta Putra
Accounting Study Program
Undiknas University
Denpasar, Bali, Indonesia
agatathbst@gmail.com

Gede Sri Darma
Professor
Undiknas University
Denpasar, Bali, Indonesia
sridarma@undiknas.ac.id

Abstract:- This research aims to (1) know and analyze the positive influence of social influence, (2) cyber security, and (3) government regulation on behavioral intention to acceptance usage of bitcoin in Indonesia. (4) To know and analyze the positive influence of quality of support infrastructure and (5) behavioral intention on use behavior to acceptance usage of bitcoin in Indonesia. This research uses saturated sampling method, which is the entire population as used as a research sample. Sources of data in this study are primary data obtained from the answers of respondents with use questionnaire. The data analysis technique used is outer model, inner model, and hypothesis assessment.

Based on the results of bootstrapping (t-test), this shows that (1) Social influence, (2) Cyber security, and (3) Government regulation has a significant positive effect on Behavioral Intention to acceptance usage of bitcoin in Indonesia. In addition, (4) Quality of support infrastructure has a positive correlation but doesn't have significant effect on Use Behavior to acceptance usage of bitcoin in Indonesia, while (5) Behavioral intention has a significant positive effect on Usage Behavior to acceptance usage of bitcoin in Indonesia. The research implications in using of bitcoin, the company is expected to provide education about bitcoin, improve transaction security systems, provide information related to regulations that allow to users and provide additional facilities to maintain the loyalty of bitcoin users. Limitations in this research are not using moderating variables and slightly amount of samples. For future research it is recommended to increase amount of samples, use moderating variables, use new variables that relevant to bitcoin and retest cyber security and government regulation variable.

Keywords:- *Bitcoin, Cryptocurrency, Financial Technology, Indonesia, UTAUT Model.*

I. INTRODUCTION

The development of technology has led to a new breakthrough in the financial sector that is cryptocurrency which is included as financial technology. Cryptocurrency has a variety of types are Bitcoin, Dogecoin, Litecoin, Dashcoin, Ripple, Stellar and many other types of cryptocurrency. The most popular cryptocurrency in Indonesia is Bitcoin. According to Feld, Schönfeld, & Werner in a journal [1], Bitcoin can be defined as a decentralized financial protocol based on a peer-to-peer network that is able to connect any computer in the world to make open accounting books.

There are many factors that influence the acceptance of Bitcoin use in Indonesia, that are social influence, cyber security, Indonesian government regulations, and quality of support infrastructure. The usage of Bitcoin in Indonesia has be debatable issue in the society due to the absence of regulations that in detail control the using of the cryptocurrency, and additional the absence of government institutions that oversee the using of Bitcoin so that it is assumsed vulnerable harming to people who use Bitcoin.

Because of debatable issue in Indonesian society, which led researchers to conduct research about acceptance the usage of Bitcoin, there were several previous research that investigate about Bitcoin that are [1], [2], [3], [4], and [5]. The previous researchers got different research results which created inconsistencies. The emergence of inconsistencies in the results of previous research led to a lot of motivation for the next researchers to reexamine the acceptance of the using Bitcoin, especially in Indonesia.

The purpose of this scientific journal is to know and analyze the impact of Social Influence, Cyber Security, Government Regulation, and Quality of Support Infrastructure on Acceptance Usage of Bitcoin in Indonesia. This research is expected to be used as an additional reference for further research. The results of this research are expected to help the development of accounting science, especially those related to Bitcoin which is also know as financial tehconology. This research is also expected to be able to help investors and cryptocurrency traders, especially Bitcoin traders to be used for consideration of investment decisions in the future. In addition, this research is expected to be able to add insight and knowledge of Indonesian society about acceptance usage of Bitcoin in Indonesia.

II. LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

A. Bitcoin

According to Feld, Schönfeld, & Werner in the journal [1], Bitcoin can be defined as decentralized financial protocols based on peer to peer networks that are able to connect any computer in the world to make open accounting books. According to Nakamoto in the journal [6] it can be concluded that the basic concept of Bitcoin is making a system of decentralized authority transactions without any relationship with third parties. The use of Bitcoin is quite easy that are by using e-wallet to store

Bitcoin, such as Xapo, Coinbase, Luno and others. Examples of bitcoin addresses used by user that is 6Lo7mIJkE16qVs3Wqe9HvFf9CBsaUZc37K which use 34 unique codes that are likened to fingerprints for user.

B. Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) model is a theory that is widely used as a reference for conducting research on the acceptance use of a newly developing technology in a society. The UTAUT model was developed by Venkatesh, Michael, Gordon and Fred in 2003. According to Venkatesh et. al. in journals [7], [8], and [9], there are 4 (four) core variables are facilitating conditions, social influence, effort expectancy, and performance expectancy. As for the moderator variables are voluntariness of use, experience, age and gender. There are definitions of the core variables as follows :

- *Performance Expectancy*

Defined as the degree to which an individual believes that the new technology will help the individual to improve his performance.

- *Effort Expectancy*

Defined as the level of ease of use a new technology that can ease the work of the individual concerned.

- *Social Influence*

Defining the degree to which an individual's views and interests on a new technology that is trusted and suggested by others to use the new technology.

- *Facilitating Condition (Quality of Support Infrastructure)*

Defines the level of an individual who trusts and believes that the quality of existing technical infrastructure and organizations can support the use of new technology.

- *Behavioral Intention*

Defined as a motivation and desire of someone to act and plan of using a new technology continuously in the future.

- *Use Behaviour*

Defined as an expression of individual intentions and the use frequency of individual in using a new technology.

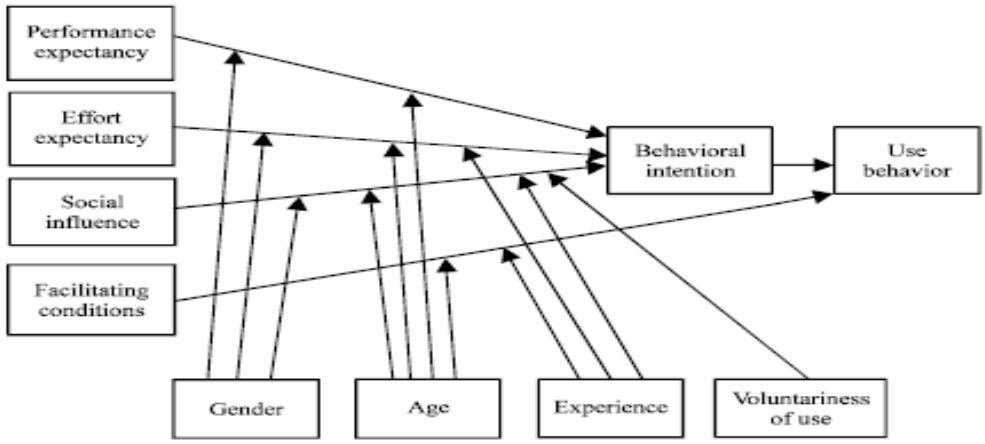

Fig 1:- UTAUT Model

C. Cyber Security

Cyber security is a computer system that secures information of user funds from criminal acts or cybercrime. According to Whitman and Mattord in research of [10] and [11], there are 5 (five) aspects related to information security which will be explained as follows :

- *Privacy*

Defines a system that guarantees data and information security for the owner of information from other people.

- *Identification*

Defines a system that can identify and recognize the account owner so that users can get access rights to the system.

- *Authentication*

Defines a system that can recognize and prove that the owner of the information and data is indeed the legitimate owner claimed.

- *Authorization*

Defines that a system can guarantee users to access, delete and change the contents of the data owner's information.

- *Accountability*

Defines that a system must be able to present information data of all activities that have been acted by the user on using of the system.

D. Government Regulation

According to Danella in a journal [12], it can be concluded that according to Bank Indonesia, Bitcoin is considered not feasible to be used as a legal payment instrument in Indonesia in accordance with several laws that apply in the banking world that are Law number 23 year 1999 concerning Bank Indonesia and Law number 7 year 2011 concerning Currency. In the Act Bank Indonesia states that the legal currency in the Republic Indonesia is Rupiah. Whereas in the Currency Act states that a currency is money issued and circulated by Bank Indonesia as a Central Bank called Rupiah.

Thus, the government regulation of Republic Indonesia can affect people's intention in using a new technology, especially using Bitcoin. In addition, there are many debatable issue in society so that the Indonesian government needs to examine more deeply the regulations that will be used to regulate and control the usage of Bitcoin in Indonesia.

E. Theoretical Framework and Research Hypothesis

Based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model and the existence of previous researchs that adopted UTAUT model to conduct their researchs, the modified framework in this research can be seen in Figure 2 following.

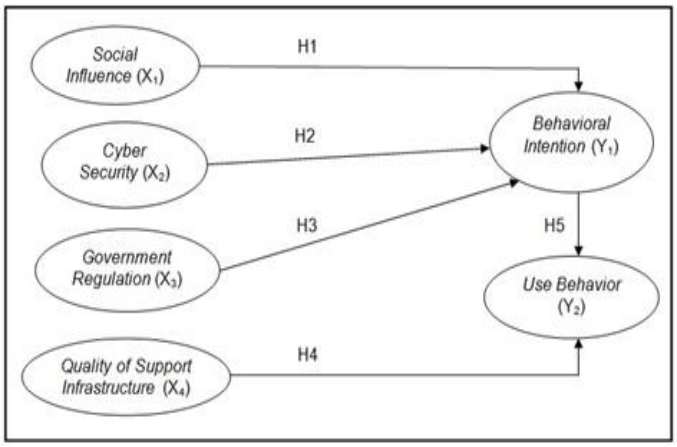

Fig 2:- Theoretical Framework

Based on the theoretical framework model, previous research and also there are differences in the results of previous research, it can be assumed that the research hypothesis in this study can be seen in table 1. following.

H1	Social Influence has a positive effect on Behavioral Intention to acceptance usage of Bitcoin in Indonesia
H2	Cyber Security has a positive effect on Behavioral Intention to acceptance usage of Bitcoin in Indonesia
H3	Government Regulation has a positive effect on Behavioral Intention to acceptance usage of Bitcoin in Indonesia
H4	Quality of Support Infrastructure has a positive effect on Use Behavior to acceptance usage of Bitcoin in Indonesia
H5	Behavioral Intention has a positive effect on Use Behavior to acceptance usage of Bitcoin in Indonesia

Table 1:- Research Hypothesis

F. Operational Definitions

In this study using 3 (three) types of research variables, including an indicators as following :

➢ *Independent Variables*

- Social influence : (1) Influential people, (2) Friend factor, (3) Family factor, and (4) Social status.
- Cyber security : (1) Privacy, (2) Identification, (3) Authentication, (4) Authorization, and (5) Accountability.
- Government regulation : (1) Portability, (2) Durability, (3) Divisibility, (4) Recognizability, and (5) Stability of value.
- Quality of support infrastructure : (1) The existence of resources, (2) Having knowledge, (3) Available people who help in using difficult systems, and (4) Compatibility.

➢ *Dependent Variable*

- Use behavior : (1) Frequent use, (2) Planning to use, and (3) Predict to use.

➢ *Intervening Variable*

- Behavioral intention : (1) Satisfaction with the system, (2) Satisfaction with usage, and (3) Satisfaction inexperience.

III. RESEARCH METHODS

In this research, the research location at Indodax Seminyak for respondents in Bali island. In addition, for respondents outside the Bali island, researcher distributed questionnaires online through https://forumbitcoin.co.id/, and also distributed questionnaires to Bitcoin user communities on social media, such as Telegram, Line, WhatsApp and Instagram.

In this research took a sample of all existing populations, which amounted to 98 respondents. The data collection technique in this research is to use a survey method with a tool using questionnaires to obtain data and in this study using a rating scale of 1-10.

In this research using quantitative data. According to [13], the method of quantitative research is a method that uses research data in the form of numbers and analysis

using statistics. This quantitative data is obtained from respondents' answers using questionnaires. The data source used in this research is primary data. In this study, the research data source come from the response of Bitcoin users, such as in the Bitcoin forum, and other social media groups.

In addition, testing the research instrument using path analysis with using SEM Smart PLS (Partial Least Square). According to [14], the evaluation of the PLS model is done by evaluating the outer model and inner model.

IV. RESULTS AND DISCUSSIONS

G. Measurement Model

In this measurement model testing, several requirements will be tested which aim to find out indicators that have met and not fulfilled the requirements. This test will be carried out that are the validity and reliability test which can be seen in Figure 3 following.

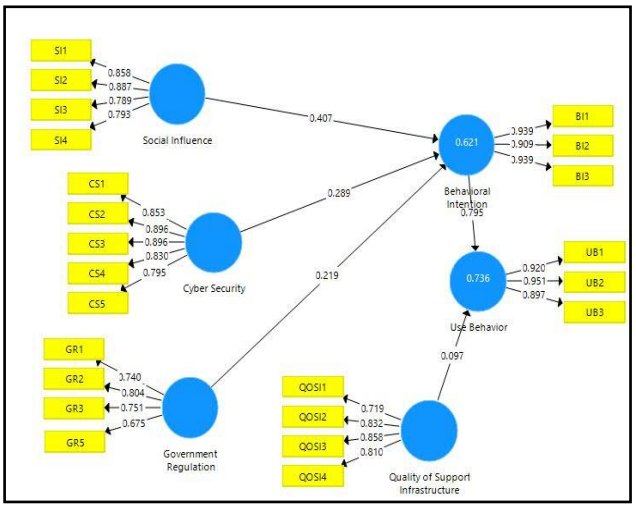

Fig 3:- Measurement Model Results

H. Outer Model

➢ *Convergent Validity*

Construct	Indicators	OL	Construct	Indicators	OL
SI	SI1	0.858	QOSI	QOSI1	0.719
	SI2	0.887		QOSI2	0.832
	SI3	0.789		QOSI3	0.858
	SI4	0.793		QOSI4	0.810
CS	CS1	0.853	BI	BI1	0.939
	CS2	0.896		BI2	0.909
	CS3	0.896		BI3	0.939
	CS4	0.830			
	CS5	0.795	UB	UB1	0.920
				UB2	0.951
GR	GR1	0.740		UB3	0.897
	GR2	0.804			
	GR3	0.751			
	GR5	0.675			

Table 2:- Outer Loading (OL) Results

Based on the Outer Loading results above it can be seen that the GR4 indicator in the Government Regulation is eliminated. This is because the GR4 indicator gets a test result of 0.428 so it is not feasible to be used as a measuring instrument in outer model testing.

According to [14], if the loading score is between 0.5 - 0.7, the researcher shouldn't delete the indicator that has the loading score as long as the indicator AVE and Communality score is > 0.50. Based on the result tests above, all indicators except GR4 have values above 0.50 so it can be assumed that all indicators except GR4 fulfiil the convergent validity test requirements.

The results of this research found that the social influence on the S2 indicator (Friend Factor) had the greatest impact on making someone affected and intending to use bitcoin. In addition, there are 2 indicators on cyber security indicators that have a major impact on the growth of someone intention to use bitcoin that are CS2 (Identification) and CS3 (Authentication). Government regulation in the GR2 indicator (Durability) has a significant impact considering that bitcoin cannot be damaged in its use.

At quality of support infrastructure there is an indicator with the greatest validity that is QOSI3 (Available people who help in using difficult systems) considering the use of bitcoin which tends to be difficult so there needs to be assistance from people who are experts in its use. Behavioral intention there are 2 biggest indicators that are BI1 (Frequent use), and B13 (Predicting to use) which causes initial steps and motivation to use bitcoin in the future. Use behavior has 1 indicator is UB2 (Satisfaction with usage) so that the main factor of bitcoin usage if there is comfort and satisfaction with the use of bitcoin that provides benefits to its users.

➢ *Discriminant Validity*

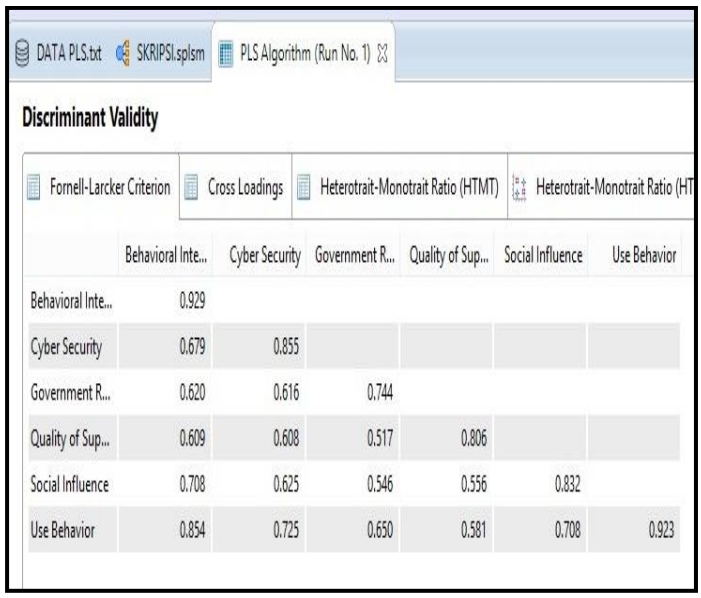

Fig 4:- Discriminant Validity Results

Based on the discriminant validity results above, it can be seen that the root value of Average Variance Extracted (AVE) that can be seen in the diagonal value is higher than the correlation between latent variables, so it can be concluded that the discriminant validity test in this research is valid.

➢ *Construct Reliability*

Fig 5:- Construct Reliability Results

Based on the reliability testing above, it can be seen that the value of Cronbach's Alpha and Composite Reliability on each variable has a value above 0.70, so it can be concluded that reliability testing in this research is declared valid or fulfills the testing requirements.

I. Inner Model

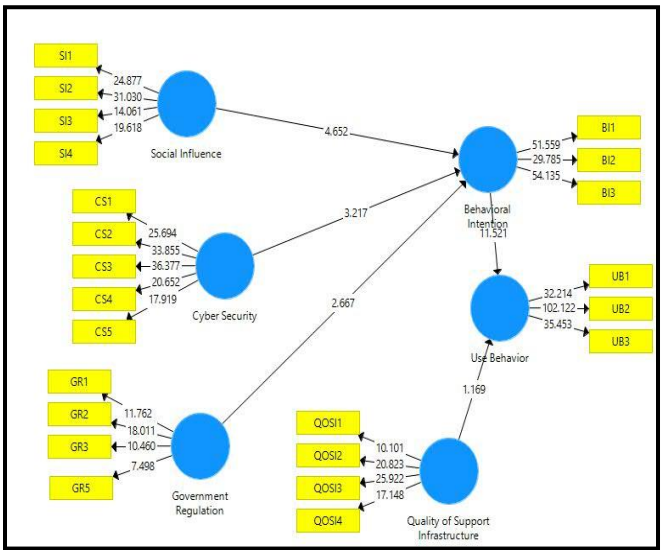

Fig 6:- Inner Model Results

In this research, the testing of the structural model (inner model) will test as follows :

➢ *R Square (R^2)*

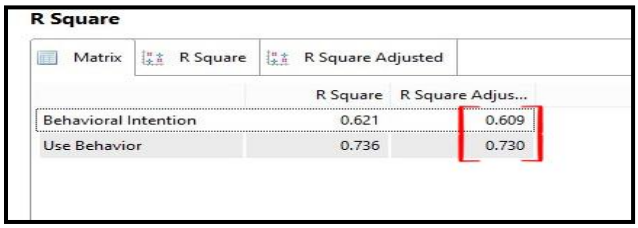

Fig 7:- R2 Testing Results

Based on the test results above, it can be seen that the adjusted R2 value of Behavioral Intention is 0.609 which means that 60.9% of Behavioral Intention variations can be explained by variations in Social Influence, Cyber Security and Government Regulation while the remaining 39.1% is explained by variations in outside the research model used.

In addition, the adjusted R2 value of Use Behavior is 0.730, which means that 73% of variation in Use Behavior can be explained by variations in Quality of Support Infrastructure and Behavioral Intention while the remaining 27% is explained by variations outside the research model used.

➢ *Hypothesis Testing*

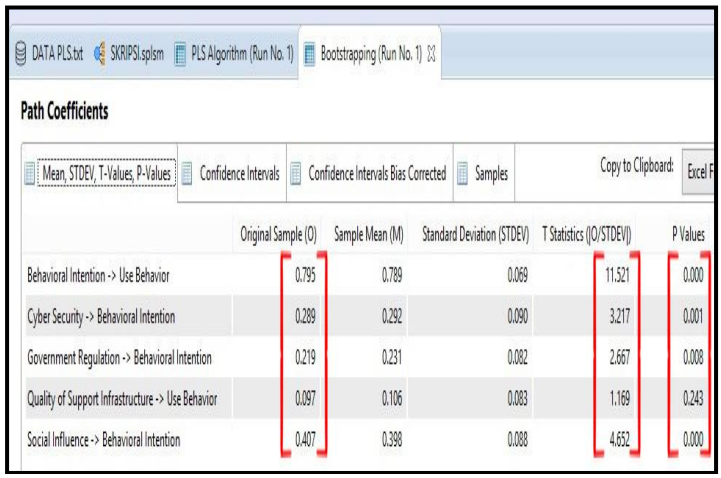

Fig 8:- Bootstrapping Results (T-Test)

Based on the bootstrapping test (t-test) results, it can be concluded that Social Influence, Cyber Security and Government Regulation have a significant positive effect on Behavioral Intention because the value of T-statistics > 1.96 and the value of P-values < 0.05 and the original sample value positive and can be summarized as table 3 following.

Hypothesis	Effect	T-statistics	P-Values	Supported
H1	SI -> BI	4.652	0.000	Yes
H2	CS -> BI	3.217	0.001	Yes
H3	GR -> BI	2.667	0.008	Yes
H4	QOSI – UB	1.169	0.243	No
H5	BI -> UB	11.521	0.000	Yes

Table 3:- Hypothesis Testing Results

J. Discussions

There are several things that underlie the effect or not in the UTAUT model that has been used in this research. These things can be described as follows :

- *Social Influence toward Behavioral Intention*

In this research get the results that Social influence has a significant positive effect on behavioral intention to acceptance usage of bitcoin in Indonesia.

According to Jogiyanto in her thesis [15], social influence is said to be a direct determinant of behavioral intention which can be explained by the following constructs, including (1) subjective norms, (2) Social factors, and (3) Image.

Thus, it can be concluded that social norms affect someone to do something that the individual believes in the technological results that have been used by other people and that action can be influenced by other people, friends, family and people who have used the technology.

- *Cyber Security toward Behavioral Intention*

The results of this research that Cyber security has a significant positive effect on behavioral intention to acceptance usage of bitcoin in Indonesia.

According to Whitman and Mattord in the thesis [10] and [11], mention several factors related to information security in the use of a technology that are privacy, identification, authentication, authorization, and accountability.

Thus, the use of bitcoin as the latest financial technology requires a cyber security that aims to avoid cybercrime, so that the security aspects in bitcoin are very detailed and in depth developed to reduce the opportunity for the crime of cybercrime.

- *Government Regulation toward Behavioral Intention*

In this research get results that Government regulation has a significant positive effect on behavioral intention to acceptance usage of bitcoin in Indonesia. This shows that the legislation issued by the government can have an impact on the public response.

Thus it can be concluded that Indonesian government regulation can influence people's intention in using a new technology, especially usage of bitcoin. In addition, regulations issued by the government can lead to debatable issue, so that need deeper investigate to make regulations so that bitcoin transactions can be controlled by the government.

- *Quality of support infrastructure (Facilitating Conditions) toward Use Behavior*

In this research get results that Quality of support infrastructure has a positive correlation but doesn't have a significant effect on use behavior to acceptance usage of bitcoin in Indonesia.

According to research [16], Regarding the insignificance of the influence of facilitating conditions on use behavior can be due to the absence of experience and age moderators as described by Venkatesh et al.

Thus, the doesn't effect of quality of support infrastructure is due to the absence of moderating variables, besides that there are not many adequate resources to use bitcoin technology such as in rural areas which have not had much supporting infrastructure, such as signal towers, capacity and internet reliability network.

- *Behavioral Intention toward Use Behavior*

In this research get results that behavioral intention has a significant positive effect on use behavior to acceptance usage of bitcoin in Indonesia.

According to Venkatesh et al in the journal and research results of [16], in his research found that behavioral intention has a positive and significant influence on use behavior. The findings are the same as the basic concept of the UTAUT model that is the intention to using a technology will affect the use of the technology.

Thus, the acceptance usage of bitcoin is strongly influenced by the intention of individual behavior before the individual is really going to the decision making stage. The use of bitcoin by individuals must have a strong motivation to use this technology that is to using bitcoin.

V. IMPLICATIONS OF RESEARCH

Based one constructs of social influence, cyber security and government regulations positively influence behavioral intentions. In terms of social influence, the company (Indodax) is expected to provide more public awareness about the advantages and benefits of using bitcoin. In addition to cyber security, the company (Indodax) further optimizes and enhances the security system of bitcoin trading transactions for user convenience and satisfaction.

In terms of government regulation, the company (Indodax) is tighter and provides information and education regarding the use of bitcoin so as not to violate applicable regulations. Based on the construct of quality supporting infrastructure, there are not many adequate facilities to maintain the loyalty of bitcoin users, so the company is expected to be able to provide additional facilities, such as Bitcoin ATM.

VI. LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

This research was conducted online in Indonesia by distributing questionnaires at https://forumbitcoin.co.id and the bitcoin community on social media, such as Telegram, Line, WhatsApp and Instagram. In this research there are

limitations, such as the slightly amount of sample datas, and don't use moderating variables.

For future research it is recommended to use moderation variables to maximize research results, increase the amount of samples, use new variables relevant to bitcoin, and can also reexamine cyber security and government regulation variables because that two variables are still relatively new.

VII. CONCLUSIONS

On the data analysis results and discussion described above, it can be concluded as follows:

- Social influence has a significant positive effect on behavioral intention to acceptance usage of bitcoin in Indonesia. This is evidenced in the results of the test, which is like the Original Sample (O) value of 0.407 (positive), T-statistics of 4.652 higher than 1.96 (influential) and P-values of 0.000 below 0.05 (significant).
- Cyber security has a significant positive effect on behavioral intention to acceptance usage of bitcoin in Indonesia. This is evidenced in the results of the test, which is like the Original Sample (O) value of 0.289 (positive), T-statistics of 3.217 higher than 1.96 (influential) and P-values of 0.001 below 0.05 (significant).
- Government regulation has a significant positive effect on behavioral intention to acceptance usage of bitcoin in Indonesia. This is evidenced in the results of the test, which is like the Original Sample (O) value of 0.219 (positive), T-statistics of 2.667 higher than 1.96 (influential) and P-values of 0.008 below 0.05 (significant).
- Quality of support infrastructure has a positive correlation but does not have a significant effect on use behavior to acceptance usage of bitcoin in Indonesia. This is evidenced in the results of the test, which is like the Original Sample (O) value of 0.097 (positive), T-statistics of 1.169 lower than 1.96 (no effect) and P-values of 0.243 above 0.05 (not significant).
- Behavioral intention has a significant positive effect on use behavior to acceptance usage of bitcoin in Indonesia. This is evidenced in the results of the test, which is like the value of the Original Sample (O) of 0.795 (positive), T-statistics of 11.521 higher than 1.96 (influential) and P-values of 0.000 below 0.05 (significant).

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