Regulations and Behavioral Intention for Use Cryptocurrency in Thailand

Jinnarat TAMPHAKDIPHANIT
National Institute of Development Administration[1]
International College, Bangkok, Thailand
jinnarat.tam@nida.ac.th jinnarat.tam@gmail.com

Marisa LAOKULRACH
National Institute of Development Administration
International College, Bangkok, Thailand
marisa.lao@nida.ac.th marisa.laokulrach@gmail.com

Abstract:

This paper identifies the development of cryptocurrency's regulations and influences of people's intentions to use cryptocurrency in Thailand. The analysis of behavioral intentions to use cryptocurrency is conducted applying the unified theory of acceptance and use of technology (UTAUT) model. The study used the questionnaire survey, and applied the multiple regression analysis to analyze the influences of Thai people to use cryptocurrencies. This research categorizes the purposes of cryptocurrency into three groups including: the first purpose is investment, as people buy cryptocurrency for wealth increasing; second, it is a means of payment for goods and services; and the third purpose is collecting points and redeeming rewards, as people are able to simply compare cryptocurrency to credit card points and redeem them for rewards. Regarding the findings, social influence is the most important factor that persuades people to use cryptocurrency. The other determinants in the UTAUT model that encourage people intention to use cryptocurrency are facilitating conditions, effort expectancy, and performance expectancy.

Keywords: cryptocurrency; behavioral intention to use; UTAUT; digital money.

JEL Classification: G11; G18; G41.

Introduction

Cryptocurrency is defined as the next currency platform where a population can access technological services. Bitcoin was the first and has been the most famous cryptocurrency (Barnes 2018). Bitcoin and other cryptocurrencies have been traded in countries for years, and accepted as a payment by a few businesses. People were searching for new assets that would store value without significant tax burdens, and, as a result, cryptocurrency became popular among those who are trying to circulate their wealth.

Thailand aims to reach the Digital 4.0 era, so it is essential to develop infrastructure technologically, and financial technology is one of the fundamental factors. There are numerous financial assets, including cryptocurrencies, intending to respond to changes in social behaviors, such as a cashless society.

Thailand, one of the leading countries in ASEAN, is the early adopter of digital asset business regulations. In 2018, the important move of the digital asset decrees on crypto-regulation and crypto-taxation have been groundbreaking and have played a significant role in Thailand becoming the digital hub of South East Asia. Thailand's Securities and Exchange Commission (SEC) has issued a full set of laws and regulations for cryptocurrencies and crypto assets transactions involving for Bitcoin, altcoins, and all types of digital tokens.

This study has two main objectives including, first to reveal the regulations on cryptocurrency in Thailand, and secondly to apply the concept of the Unified Theory of Acceptance and Use of Technology (UTAUT) investigating the factors contributing to the intention to use or invest in cryptocurrencies in Thailand.

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[1] 118, Seri Thai Rd., Klongchan, Bangkapi, 10240

1. Literature Review

This section provides the information on the development of cryptocurrencies' regulations in Thailand, and the review of UTAUT theory to explain four factors including Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions influencing the intention to use the technology.

1.1. Cryptocurrencies' Regulations in Thailand

Cryptocurrencies operate under a system called Blockchain. Bitcoin is the first and most well-known cryptocurrency expected to trade in Thailand. Nevertheless, Bitcoin transactions were initially (in July 2013) considered illegal by the Bank of Thailand. Later, in 2017, the SEC publicized the declaration regarding Thailand's perspectives on initial coin offerings (ICOs) in a document called 'CryptoFintech in Thailand: The Thai Initial Coin Offering (TICO)'. In 2018, JFin was the first initial coin available in Thailand, offered by Jaymart Public Company Limited and J Venture Company Limited with the purpose of raising funds and improving its Decentralized Digital Lending Platform. The company claimed that this first ICO was successful and that the next ICO would be locked up until 2019. Right after JFin was launched, the Bank of Thailand (BOT) sent out letters to commercial banks and other financial institutions with regards to separating the transactions for digital currency from those of traditional transactions.

In 2018, there was a significant move for Thai cryptocurrencies, which was the Royal Decree on the Digital Asset Businesses B.E. 2561 (2018). This Royal Decree determined the regulation that, for instance, stakeholders are required to register with the SEC within 90 days of the decree becoming effective and will be taxed. Later, the regulations on intermediaries and service providers were launched, but the Bank of Thailand prohibited commercial banks from directly participating in transactions relating to cryptocurrencies. The Bank of Thailand has approved six companies as exchanges and two companies as dealers. Project namely "Inthanon" was announced, representing the idea of a central bank digital currency (CBDC) to improve the financial system in Thailand. Those who intend to operate a digital-asset business must get the approval by the Minister of Finance upon recommendation of the SEC. Digital-asset businesses under the Royal Decree are categorized into three types, as shown in table below.

Table 1. Digital asset businesses in Thailand

	Digital-asset exchange	Digital-asset broker	Digital-asset dealer
Status	Center or a network	Person	Person
Purposes	Purchasing, selling, or exchanging of digital assets	Being a broker or an agent for any person in the purchase, sale, or exchange of digital assets to other person	Purchasing, selling, or exchanging digital assets for his/her own account
Process/ operation	Matching or arranging the counterparty or providing the system	In consideration of a commission, fee, or other remuneration	Outside the digital-asset exchange

Source: Security Exchange Commission of Thailand

All businesses relating to cryptocurrency will be reported and monitored by the SEC. The SEC can create and release policies to regulate, monitor, and enhance digital assets and businesses. The SEC also determines fees regarding approval for businesses relating to cryptocurrency. The SEC will check whether those who use cryptocurrency comply with all the relevant regulations, such as the Anti-Money Laundering Act, B.E. 2542 (1999). There are also more than 40 penalties when people do not obey the rules. For example, brokers who do not register with the SEC or who report false information in their filing to the SEC may be sentenced to prison or fined.

Two types of assessable income were added to the Act Amending the Revenue Code (No. 19), B.E. 2561 (2018), regarding tax for cryptocurrency transaction and operation, in order to collect taxes from dividends and other benefits of holding digital tokens with similar characteristics, and to benefit from receiving digital assets only when the market value is higher than the cost. Withholding personal income tax is set at 15 percent of assessable income included in net income. These regulations were released because cryptocurrencies have become more popular as the fundraising tools. The regulations will ensure that customers are provided with correct and clear information and will prohibit negative impacts on financial stability and the economy.

In April 2019, after prohibiting ICO for a year, the SEC accepted ZMICO as an ICO portal, although cryptocurrencies are limited only under the Royal Decree on the Digital Asset Businesses and not the Securities and Exchange Act, since their underlying assets are not in the same line, which results in security issues.

In March 2020, four cryptocurrencies had been approved by SEC including BTC, ETH, XRP, and XLM. They can be legally used for investments in ICOs and as base trading pairs against other cryptocurrencies.

Cryptocurrencies are created for the medium of exchanging goods, services, or other rights, including exchanges between digital assets. These purposes are the basic expected performance of cryptocurrency. As a result, adopting cryptocurrency depends on the user's perception that cryptocurrency delivers on those purposes.

1.2. Unified Theory of Acceptance and Use of Technology (UTAUT) Model

Since cryptocurrency is defined as a digital asset, it is comparable to new technology for persons to perceive. As a result, researchers apply a technology-acceptance model in order to explain the intention to use cryptocurrencies. The Unified Theory of Acceptance and Use of Technology (UTAUT) model is an extension of the Technology Acceptance Model (TAM) by Venkatesh and Davis (2000) that analyzes how people adopt new technology. The TAM (Davis 1989) indicates the psychological factors behind accepting technology.

As seen in Figure 1, the TAM contains two factors, perceived usefulness and perceived ease of use, which affect people's attitudes toward new technology. Perceived usefulness directly impacts people's intention to use, and the relationships between attitude, intention to use, and actual use are defined by the theoretical underpinning of the theory of reasoned action (TRA). Having only two variables in the TAM means that it is too narrow to accurately examine people's behaviors (Venkatesh and Davis 2000). Consequently, the UTAUT model was developed using five additional behaviors: the motivational model, the theory of planned behavior, the model of PC utilization, innovation diffusion theory, and social cognitive theory. After it was developed, it became popular and widely used. William *et al.* (2014) conducted research comparing eight models that mediate the acceptance of new technology using statistical tools and found that the UTAUT model outperformed other models.

Figure 1. Comparison of the TAM and UTAUT models
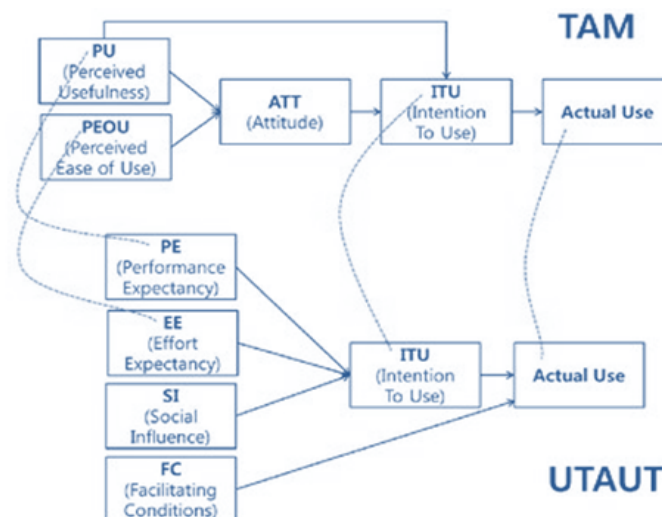
Source: Seok Kim, Kee-Hyuck Lee, Hee Hwang and Sooyoung Yoo (2016)

The UTAUT model was constructed by extracting three variables that influence behavioral intentions to use, one variable that influences action, and four control variables including gender, age, experience and voluntariness of use, that mediate the effects of the process. Some of the variables had similar concepts with variables used to construct the TAM. The study of the adoption of internet banking by Foon and Fah (2011) found four main factors in the UTAUT model, performance expectancy, effort expectancy, social influence, and facilitating conditions that support the adoption of new technology.

Performance expectancy (PE) is comparable to perceived usefulness in the TAM, as shown in Figure 1. It is implied the user expectation and satisfaction with products or services where they realize the benefits and relative advantages of new products or services (Bhattacherjee 2001). Effort expectancy (EE) is comparable to perceived ease of use in the TAM. It implies the difficulty of using new technology on new products and services. If products or services are complex, it may negatively affect user satisfaction and continuity of use (Lee *et al.* 2007).

Previous studies concerning the adoption of digital banking by the UTAUT model suggest that ease of use is key when people adopt online banking services, and online services should make life easier by providing a user-friendly interface (Puschel *et al.* 2010). Based on the TAM, when cryptocurrency is viewed as a new financial technology, to determine the perceived ease of use, cryptocurrency is required to present systems and understandings that are accessible and user friendly.

Social influence (SI) is more essential in the current situation, as others' opinions highly influence individuals, especially referees who are well known and important to users (Zhou 2011). Venkatesh *et al.* (2003) stress the importance of society for people to learn and use technology. The TRA suggests that others' thought about them to do or not to do are matter for individual (Fishbein and Ajzen 2012).

Lu *et al.* (2005) studied the mobile industry, specifically wireless internet services via mobile technology, and found that the social influence of an information system has an impact on how people adopt new technology. Based on guidelines from the study, the use of cryptocurrency should relate to social influence.

Facilitating conditions (FCs) are defined as users being knowledgeable and resourceful enough to use new products and services, in this case, cryptocurrency. If users are not ready for both resources and knowledge, it will lessen their overall perception of a product's utility (Zeithaml 1988). FCs should explain the intention to use cryptocurrency based on the analysis of the adoption of the web course tool, indicating that the role of the support function has a significant impact on people's decision to purchase and adopt new technology.

Intention to use (ITU), or behavioral intention (BI), is defined as the "subjective probability that he or she will engage in a given behavior" (Homburg *et al.* 2005). The more engaged a person is in a product or service, the more associated behaviors they perform. ITU, in this research, is a dependent variable that explains whether people will use cryptocurrency based on their relationship with four determinants. The conceptual framework identifying the relationship of dependent variables and independent variable is developed as shown in Figure 2.

Figure 2. Comparison of the TAM and UTAUT models
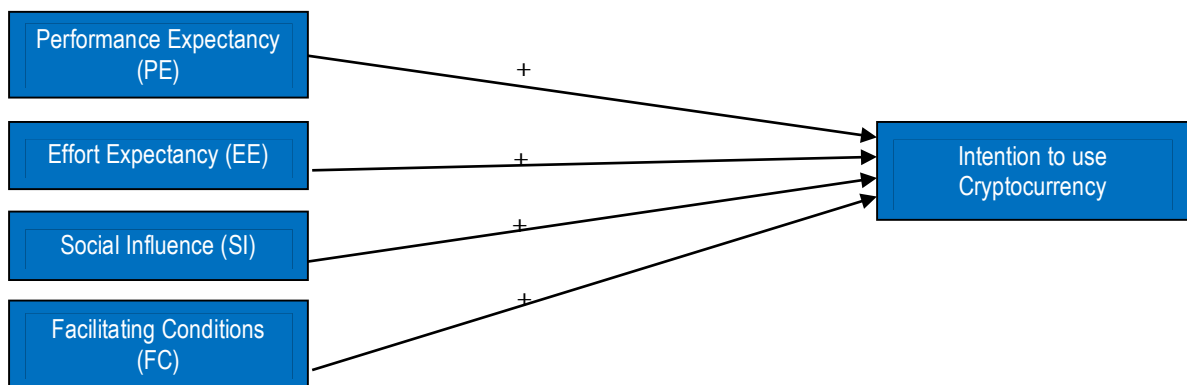
Source: Authors' own development

2. Methodology

This research was conducted using quantitative methods. Data was statistically tested to investigate whether four variables in UTAUT model influence people's intention to use cryptocurrency. The questionnaire was developed based variables in UTAUT model to assess people's intention to use and attitude toward cryptocurrencies.

To conduct the research, the survey and questionnaires were distributed to gather data. Samples were selected using a nonprobability method of convenient sampling, based on subjects' availability and willingness to take part. The age, educational background, and experiences in investment products were collected to study the characteristics of two sample groups. The first group includes people who have no experience in any investment tools or have only experienced in bank deposits. The other group is made up of people who have invested in other financial assets apart from bank deposits with the assumption that they have better understanding of risk and speculation.

The questionnaires were adopted from the study of Sarfaraz (2017) to measure the influences of four perspectives including Performance Expectancy, Effort Expectancy, Social Influences, and Facilitating Conditions to behavioral intention to use the cryptocurrency. Each variable is measured using the 5 Likert Scales: 5 represents strongly agree, 4 represents agree, 3 represents neutral, 2 represents disagree, and 1 represents strongly disagree. Then data were processed for three statistical treatments consisting of: first, reliability analysis of the measurement, second, descriptive analysis to learn the samples' characteristics, and lastly regression analysis to investigate the influences of four factors from UTAUT model.

3. Results

3.1. Reliability Test

Researcher used Cronbach's alpha coefficient to determine reliability of variables. Cronbach's alpha coefficient of 0.70 or higher is considered as the reliable and acceptable instruments in research.

Table 2. Reliability test results

Variables	Cronbach's Alpha coefficient
Performance Expectancy	0.852
Effort Expectancy	0.804
Social Influence	0.893
Facilitating Conditions	0.900

Source: Authors' own research results

As the result shown in Table 2, reliability of each variable is satisfactory because the Cronbach's Alpha of them are more than 0.700.

3.2. Descriptive Analysis

The 214 respondents' characteristics are studied. The highest percentage with 32.7% of the sample are 18-24 years old called Generation Z (Kasasa 2019), and 34.6% are 25-34 years old called Millennial (Kasasa 2019).

Table 3. Age of respondents

AGE	Frequency	Percent
18-24	70	32.7
25-34	74	34.6
35-44	14	6.5
45-54	17	7.9
55-64	26	12.1
65+	13	6.1
Total	214	100.0

Source: Authors' own research results

The educational level of bachelor's degree accountable for 54.7% is the highest amount among respondents, followed by 29% of Master's Degree, and 16.4% of less than or equivalent to High school, respectively as shown in Table 4.

Table 4. Education level of respondents

Education level	Frequency	Percent (%)
Less than or equivalent to High School	35.0	16.4
Bachelor's Degree	117.0	54.7
Master's Degree	62.0	29.0
Doctoral Degree	0.0	0.0
Total	214.0	100.0

Source: Authors' own research results

The investment experiences of respondents are reported in Table 5. The most well-known product is bank deposit, which hold by 40.6% of respondents, can be defined as the most understandable and accessible financial product. The second popular financial assets is mutual funds, followed by gold and property, stocks, and bonds and debentures respectively.

Table 5. Investment experience of respondents

Investment Experience	Percent
Bank Deposits	40.6%
Bonds and Debentures	11.4%
Mutual Funds	16.4%
Stocks	13.8%
Gold and Property	15.6%
Other Investment Tools	2.2%
Total	100.0%

Source: Authors' own research results

The average scores of each variable that influences behavioral intention to use cryptocurrency are shown in Table 6. It is found that the mean of intention to use cryptocurrency as dependent variable is 2.9346 and standard deviation at 0.62596. Effort expectancy has the highest mean at 3.3890 with 0.89679 standard deviation, followed by performance expectancy, facilitating condition and social influence, respectively.

Table 6. Mean and Standard Deviation of Independent and Dependent Variables

Independent and dependent variables	N	Mean	Std. Deviation
Performance Expectation (PE)	214	3.351	0.903
Effort Expectancy (EE)	214	3.389	0.897
Social Influence (SI)	214	2.841	1.024
Facilitating Condition (FC)	214	3.239	0.928
Behavioral intention to use cryptocurrency(BI)	214	2.934	0.625

Source: Authors' own research results

To understand the acceptance of cryptocurrency comparing between individuals who have and have not had experience in different financial products, the frequency of each group who provided the score of behavioral intention (BI) to use cryptocurrency at higher than 3 are examined. The score of three as earlier mention represents neutral view on intention, and 4 to 5 representing the higher likelihood to use cryptocurrency.

Table 7. Intention to use cryptocurrency categorized by investment experience

Investment E	Responses		BI > 3	
	Frequency	Percent	Frequency	Percent
Bank Deposits	206	40.6%	79	38.3%
Bonds and Debentures	58	11.4%	44	75.9%
Mutual Funds	83	16.4%	44	53.0%
Stocks	70	13.8%	43	61.4%
Gold and Property	79	15.6%	53	67.1%
Other Investment Tools	11	2.2%	7	63.6%
Total	507	100.0%		

Source: Authors' own research results

Concerning Table 7, individuals familiar with bond and debentures are the highest percentage of intention to use cryptocurrency among groups. Forty-four out of fifty-eight responses or 75.9% are intended to use cryptocurrency. The second is 67.1% of individuals who have invested in alternative assets such as gold and property are likely to use cryptocurrency. Other investment tools, such as government lotto, stocks and mutual funds are at 63.6%, 61.4% and 53%, respectively. As we can see from the result, individuals who have invested in financial products obviously intend to use cryptocurrency more than individuals who have invested only in bank deposit. Only 38.3% who hold bank deposit intend to use cryptocurrency.

3.3. Multiple Regression Analysis

It is concerned that the strong relationship between independent variables will lead to false interpretation of multiple regression analysis. To avoid multicollinearity problem, the tolerance and variance inflation factor (VIF) are conducted, when VIF of variables exceeds the maximum threshold of 10, that variable will be remarked highly collinear and pose problem to regression analysis (Yoo *et al.* 2014) which would be used to analyze the relationship of dependent variables and independent variable in this research.

Table 8. Collinearity Statistics

Dependent Variable: Behavioral intention to use cryptocurrency	Collinearity Statistics	
	TOLERANCE	VIF
Performance Expectancy	0.171	5.846
Effort Expectancy	0.272	3.680
Social Influence	0.299	3.344
Facilitating Condition	0.195	5.122

Source: Authors' own research results

The variance inflation factor (VIF) that quantifies the severity of multicollinearity in an ordinary least square (OLS) regression analysis is presented in Table 8. VIF indicator for performance expectancy is at 5.846, effort expectancy is at 3.680, social influence is at 3.344, and facilitating condition is at 5.122. VIF of each variable is less than the maximum threshold of 10, therefore, these numbers indicated that all factors independent variables in this research are not highly correlated to each other, and multicollinearity is not a serious problem then the model is reliable, as the factors are not impacted by correlation with other factors (Walker and Almond 2010).

The variables are analyzed using ordinary least square (OLS) regression or multiple regression and following the previous section, multicollinearity is not a serious problem for this model. This analysis is consisted of four independent variables that influence dependent variable seen below. In Table 9, performance expectancy, effort expectancy and social influence have positive relationship with behavioral intention to use cryptocurrency while facilitating conditions has negative relationship with behavioral intention to use cryptocurrency at 5% significant level.

Table 9. Multiple regression results

	Unstandardized Coefficients		Standardized Coefficients Beta	t-statistic	P-Value
	B	Std. Error			
(Constant)	1.330	.087		15.292	0.000***
PE	.111	.056	.160	1.970	0.050**
EE	.121	.045	.174	2.696	0.008***
SI	.493	.037	.807	13.152	0.000***
FC	-.178	.051	-.264	-3.483	0.001***

Note: * Significant at 0.10; ** Significant at 0.05; *** Significant at 0.01
Source: Authors' own research results

In Table 10, coefficient of determination (adjusted R Square) equal to 0.760 means all independent variables (performance expectancy, effort expectancy, social influence and facilitating condition) can explain 76.5% of behavioral intention to use cryptocurrency in Thailand.

Table 10. Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
875a	765	760	30646

Note: a. Predictors: (Constant), Facilitating Condition, Social Influence, Effort Expectancy, Performance Expectancy; b. Dependent Variable: Behavioral intention to use cryptocurrency
Source: Authors' own research results

Performance expectancy significantly positively influences the behavioral intention to use cryptocurrency with the beta coefficients of 0.111 at 5% significant level. Respondents expect to use cryptocurrency as the alternative investment to the other financial assets in order to increase their wealth. They also emphasize on benefit of cryptocurrency when it is not necessary to carry cash and aim to be cashless society. Respondents also expect the performance of cryptocurrency as similar as the using of credit card in terms of points and rewards redemption.

Effort Expectancy positively affects Thai's behavioral intention to use cryptocurrency at 1% level of significant with 0.121 beta coefficients. Respondents expect that cryptocurrency system or platform to be user-friendly, easy to learn, and understandable as it increases level of intention of people to use cryptocurrency.

The most impact independent variable to behavioral intention is social influences, which has the beta coefficients at 0.493 with the 1% level of significant positive relationship. Friends, family, and colleagues to use the cryptocurrency effect respondents. Resulting from the rapidly growth of social media and technology, individuals can access to other society easier and some desperate to become part of society by using or doing the same thing that define each society.

Facilitating conditions statistically negatively influence the intention to use cryptocurrency at 5% significant level with -0.178 beta coefficients. Negative FC can be explained by related research and results, individuals will satisfy with facilitating result when they have enough knowledge and resource necessary for cryptocurrency and as mentioned earlier cryptocurrency have been yet widely use in Thailand. Respondents have not experienced the system and tried using them for specific purposes yet. It can implied that Thai people do not feel that cryptocurrency fit with current lifestyle and Thais still lacks of resources and knowledge.

Conclusion

Thailand is now in the state of higher development of regulations as well as the system for cryptocurrency, since the SEC and regulators do not prohibit people from using cryptocurrencies, but cryptocurrency is not defined as money or guaranteed by the government. However, cryptocurrencies are not currently widely used due to their lack of liquidity, and they are highly manipulated by a few investors, which may cause a concentration risk and concerning of security issues. Regulators and system-providers closely monitor cryptocurrency and try to prevent any unexpected and unethical events, and they would only intervene if there were any signals of severe impacts on financial stability and the economy.

For intention to use cryptocurrency in Thailand, social influence has the highest impact on intention to use cryptocurrency, followed by facilitating condition, effort expectancy, and performance expectancy supporting the UTAUT model. Cryptocurrency is usually viewed as complex investment tools, and most people, from the results of this research, are not familiar with this instrument, as it is shown as having a neutral score in many aspects. The development of the trading and exchange system to be more friendly uses as well as the providing to knowledge will encourage the higher using rate of cryptocurrency especially to the group of people who have experienced in financial assets investments such as stocks, bonds, or mutual funds. Thai people are also expected for the performance of cryptocurrencies in terms of being one of the financial investment products to increase their wealth, being the payment for good and services in cashless society. If the cryptocurrency were viewed as simpler and more approachable, this would influence people more heavily. The widely use of cryptocurrency in society will significantly encourage the intention to use it more in Thailand as it was shown as the highest influence factor of the intention to use cryptocurrency.

Lastly, cryptocurrency is still new for people in Thailand, so they might not fully understand it as it is not commonly used in daily life. Regulators need to protect customers from any unfair and unethical events and communicate with cryptocurrency-related businesses in order to neutralize the system and exchanges. Businesses, dealers, and brokers need to comply with laws and regulations and keep updated as to any risk or concerns regarding all issues of cryptocurrency. Businesses and the government together will be able to increase people's trust and improve the environment surrounding cryptocurrency. The development of cryptocurrency will promote the fund raising channels for businesses, investment alternatives, and cashless society.

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