

SELECTION OF CRYPTOCURRENCY EXCHANGE PLATFORMS IN A DEVELOPING ECONOMY

Veraphong Chutipat^{*}, Rattapol Kasemrat^{**}, Tanpat Kraiwanit^{***},
Itsaree Phaksipaeng^{*}

^{*} College of Social Innovation, Rangsit University, Pathum Thani, Thailand

^{**} Corresponding author, Faculty of Economics, Rangsit University, Pathum Thani, Thailand

Contact details: Faculty of Economics, Rangsit University, 52/347 Phahon Yothin Road, Muang Eke, Pathum Thani 12000, Thailand

^{***} Faculty of Economics, Rangsit University, Pathum Thani, Thailand



Abstract

How to cite this paper: Chutipat, V., Kasemrat, R., Kraiwanit, T., & Phaksipaeng, I. (2023). Selection of cryptocurrency exchange platforms in a developing economy [Special issue]. *Corporate & Business Strategy Review*, 4(2), 344–350.

<https://doi.org/10.22495/cbsrv4i2siart14>

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ISSN Online: 2708-4965

ISSN Print: 2708-9924

Received: 09.12.2022

Accepted: 15.06.2023

JEL Classification: A10, A19, E00, E42

DOI: 10.22495/cbsrv4i2siart14

In response to the rapid growth of crypto trading in Thailand (Jenweeranon, 2022), a large number of legally registered crypto exchanges have been established in Thai digital asset marketplaces. However, the Thai government planned to impose a 15 percent withholding tax on all cryptocurrency transactions for 2022 (Helms, 2022). This might influence traders on local exchanges and the expansion of the crypto industry in the country. This study seeks to investigate the determinants of Thai investors' platform selection decisions for cryptocurrency trading. To fulfil the aim of the study, a binary regression analysis was performed through Thai crypto investors. The findings found that the choice of international cryptocurrency platforms might be defined by gender and education level. Men are more likely to choose local platforms than women are, while investors with a higher level of education are more inclined to choose global platforms. The paper suggests that local crypto exchange providers should consider their customers' gender and educational background when creating marketing campaigns, in order to increase the likelihood of gaining new clients.

Keywords: Blockchain Technology, Cryptocurrency, Digital Asset Investment, Cryptocurrency Exchange

Authors' individual contribution: Conceptualization — V.C., R.K., T.K., and I.P.; Methodology — V.C., R.K., and T.K.; Software — V.C., R.K., and T.K.; Validation — V.C., R.K., T.K., and I.P.; Investigation — V.C., R.K., and I.P.; Writing — V.C., R.K., T.K., and I.P.; Resources — V.C., R.K., T.K., and I.P.; Supervision — R.K.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

Cryptocurrency represents a novel form of exchange that has no physical form and was created by the Internet to facilitate online payments, which has the potential to revolutionize the social structure of the future economic system (Shahzad et al., 2018). Cryptocurrency is an attractive digital trend for a large number of people worldwide (Poongodi et al., 2020). Nasto and Sulillari (2021) mentioned that the main advantage of cryptocurrency is the high earning opportunity. Asian nations such as China, Japan, and Singapore have heavily invested in

cryptocurrency in recent years in order to generate a return on investment (Leemakdej & Chiraphol, 2019). In Thailand, the market's popularity for cryptocurrency trading has risen at times (Taskinsoy, 2021; Jenweeranon, 2022). According to Kemp (2022), up to 20.1% of Thais possess cryptocurrencies, which is more than the worldwide average of 10%, and the bulk of these owners are males aged 25 to 34 years old. In the recent year, numerous cryptocurrency exchanges emerged in Thailand to facilitate the trading of digital assets.

A cryptocurrency exchange is a market where cryptocurrencies such as Bitcoin, Ether, and

Dogecoin may be bought and sold. Cryptocurrency exchanges function similarly to other trading platforms with which you may be familiar. They provide accounts via which you may establish various order types to buy, sell, and speculate on the cryptocurrency market (Powell & Curry, 2023). Binance, Bitfinex, Bitstamp, Coinbase, and Kraken are examples of well-known global exchanges (Kristoufek & Bouri, 2023). Meanwhile, in Thailand, the Thai Securities and Exchange Commission (SEC) has so far given its approval to six digital asset exchanges as of July 28, 2020. These companies are Zipmex, Bitkub, BX, Satang Pro, Huobi Thailand, ERX, and BX. ERX was the most recent approved exchange. Except for ERX, which is authorized for just the latter, all six licensed digital asset exchanges are permitted for both cryptocurrencies and digital tokens (Helms, 2020). Now Bitkub still leads the pack and remains dominant in Thailand, followed by Zipmex (Regalado, 2023). Utilizing local crypto trading platforms makes investing in cryptocurrencies in Thailand a straightforward, quick, and safe procedure that can be accomplished via a digital asset exchange in the country. Thai investors may purchase, trade, and speculate on a variety of cryptocurrencies by depositing Thai Baht (THB) by bank transfer, True Money, and other means on a reputable crypto trading platform (Kreng, 2023).

Since the size and value of the digital asset market rose substantially in 2021, the Revenue Department intended to enhance its oversight over cryptocurrency trading in 2022. In 2022, all taxpayers who profited from cryptocurrencies, including investors and miners, would be liable to a 15% withholding tax, but digital asset exchanges will be exempt (Polkuamdee, 2022). This may influence traders' investment decisions on local platforms, causing them to switch to global ones. This study intends to investigate the decision-making of Thai investors in selecting cryptocurrency exchanges by studying aspects that may influence the selection. There are currently few empirical studies addressing the factors affecting the adoption of cryptocurrency exchanges. Most research has focused on other areas of crypto trading platforms, such as the enhancement of decentralized exchanges (Adamik & Kosta, 2019) and the security of cryptocurrency exchanges (Xia et al., 2020). Thus, this study fills this gap. To fulfil the objective of the research, a binary logistic regression was undertaken. The data indicate that age and education level influence selection for worldwide exchanges. Males are more likely than women to prefer local platforms, and investors with a higher level of education are more likely to choose overseas platforms. This study may be useful for cryptocurrency exchange providers in analyzing how their clients behave, allowing them to establish policies or advertising efforts to attract new customers or prevent existing customers from leaving for other platforms.

The structure of this paper is as follows. Section 1 is an introduction. Section 2 reviews the relevant literature. Section 3 is the methodology that has been used to conduct the research. Section 4 reveals the result, and Section 5 discusses the study's findings. Section 6 concludes the research, which also provides recommendations, limitations, and perspectives for future studies.

2. LITERATURE REVIEW

As there are few studies on the variables that influence the adoption of cryptocurrency trading platforms, this review of the literature focused on the factors that influence the adoption of cryptocurrencies and digital asset investments. After reviewing several documents, demographic factors were chosen as independent variables for the study. Following are some relevant research findings that contributed to the variable selection.

Demography is the scientific study of how a population develops and changes in its social environment (Prihatini & Widakdo, 2022). Hayes (2021) and Mouna and Jarboui (2022) define demography as the study of a population or the total number of individuals or species in a certain area. Demographic analysis is the study of a population's age, ethnicity, and gender, among other factors. Demographic data are numerical indicators of employment, education, income, marriage, birth, and mortality rates, among others. Scientists and governments may make better decisions if they are aware of the evolution of population factors such as size, location, age structure, and birth and death rates.

Fongthiwong and Chanchaoenchai (2019) confirmed, based on their research, that males aged 20–40 years old working in the private sector with a salary range of THB10,000–THB30,000 are more likely than others to adopt cryptocurrency. This provides support for our finding that gender and age are significant factors in the adoption of cryptocurrency. The research by Sukumaran et al. (2022) that gathered information from 211 respondents showed that the age and gender demographics of Malaysian investors significantly influenced adopters and potential adopters. Likewise, according to our results, age and gender were significant influences among Thai investors. This study also stated that education, income, and investment experience were not significant. This result is contrary to our research on income, as we found that income level is significant. Another difference between the two works is that our analysis did not examine investment experience. Hence, there is no outcome in this paper related to that aspect.

Interesting research in Turkey by Senkardes and Akadur (2021) found that men tend to invest in cryptocurrency more than women do, and men follow the investment outcome more than women do. These researchers also showed in their study examining variations between the genders based on psychological and demographic factors that women prefer investments in areas other than cryptocurrency due to their limited knowledge and income levels. In other words, the outcome of the research focused on Turkey is aligned with our results, which revealed a significant difference based on the gender of the respondents in Thailand. Research conducted in India by Mohammed Nabeel and Sumathy (2021) found four interesting outcomes that indicated that young people between 25 and 35 years of age are significantly aware of cryptocurrency. Investors with a higher education level (postgraduates) are more conscious of a digital currency compared to graduates. Investors who are professionals or businesspeople were more aware of the adoption of cryptocurrency platforms than

the rest. Lastly, the longer the period of investment experience, the greater the confidence in cryptocurrencies. The outcomes from the study in India demonstrated that age is aligned with this research only when the education level and occupation are not. Moreover, Vejačka and Pařová (2019) examined the digital and financial knowledge of Slovak women. Their work confirmed that male respondents generally had more knowledge of cryptocurrencies than female ones. In addition, the authors suggested that long-term education in information and communications technology (ICT) and economics could improve financial literacy. However, our evaluation discovered that the education level in Thailand had no significance for the adoption of cryptocurrency. A consideration of cryptocurrency adoption in Malaysia by Ku-Mahamud et al. (2019) illustrated that it does not depend on age, education level or industry sector. These results may vary because this analysis was carried out among Malaysian blockchain communities. The respondents were probably already familiar with blockchains and cryptocurrency. As a result, the outcomes indicated that educational background does not play an important role in determining the involvement of respondents in cryptocurrency. This can be differentiated from our assessment in Thailand, as our respondents were diversified in terms of demography and background, and did not point to only a group of people who were aware of either blockchains or cryptocurrencies.

According to previous studies, this study, therefore, chose age, gender, occupation, education, and a monthly income as independent variables to examine the influence of these variables on Thai investors' adoption of crypto exchanges.

3. RESEARCH METHODOLOGY

3.1. Population and samples

The population comprises a minimum of 20-year-old Thai investors who currently own cryptocurrencies. This demographic was selected because its maturity level and familiarity with cryptocurrency exchanges were deemed sufficient. The sample of 898 investors was chosen by convenience sampling (Kraiwani, 2021), which is a technique in which a sample is drawn from the population that is close at hand, easily accessible, or convenient (Obilor, 2023). This study's sample size was determined using Yamane's formula (Uakarn et al., 2021). The determined minimum number allows for 384 participants; therefore, the sample size of 898 is adequate to produce accurate and precise results while decreasing the likelihood of abnormal data distribution. These are the characteristics of the respondents in this study: The majority of responses are from men (63.6%). The overwhelming majority of responses are between the ages of 21 and 30 years old, while the minority are beyond the age of 50 years old. The biggest share of respondents (56%) is made up of students. In terms of employment, 7% are employed by state-owned enterprises, and 4.4% are in government service. Furthermore, 70% of respondents hold a bachelor's degree. Lastly, 35.2% have a monthly income of less than THB10,000.

3.2. Data collection

The data were obtained using an online questionnaire that was designed and constructed as follows: Initially, academic papers, articles, books, and reputable websites pertaining to the superiority and pitfalls of cryptocurrency, the impact of cryptocurrency usage on people, the risks of using cryptocurrency, the adoption of cryptocurrency trading platforms, and other related topics were evaluated. Subsequently, examination questions were developed based on these papers. Then, three experts reviewed a draft of the questionnaire to ensure that all questions were proper in terms of context, language, and format. They scored the questionnaire to obtain the index of item objective congruence value (IOC) (Limna et al., 2023). The least allowable IOC score is 0.50 (Wangkawan et al., 2020), and this study gives IOC values around 0.80 to 1.00. Subsequently, a pilot test with 30 non-sample participants was conducted to calculate the Cronbach's alpha coefficient and establish the questionnaire's reliability (Kaewnaknaew et al., 2022; Sitthipon et al., 2022). Acceptable questionnaires must have an alpha coefficient of at least 0.70 (Salloum et al., 2021). The final version of the questionnaire could be used for data collection with an alpha value of 0.720. Thereafter, the questionnaire was sent over other Internet channels, including email, LINE, and Messenger. Before filling out the questionnaire, respondents were required to grant permission for their responses to be used in published research. If they declined, they had the option of not completing the survey.

3.3. Data analysis

A binary logistic regression analysis was used to examine the data. This study's dependent variable is the decision-making process of Thai investors in selecting cryptocurrency exchanges, defined as whether an investor is currently employing an international platform. If the response is "yes", then the investor is using foreign platforms. If the answer is "no", it indicates that the investor is using Thai platforms. Independent variables are demographic factors, including age, gender, occupation, education, and monthly income. Because the gender only had two options, then it was converted into a dummy variable (1 = male and 0 = female).

4. RESULTS

A binary logistic regression analysis was carried out for two models to investigate the variables that Thai investors consider while choosing crypto exchanges. All dependent variables, consisting of age, gender, occupation, education, and monthly income, are all included in Model 1, while Model 2 only contains the significant independent factors that were examined in Model 1.

The results in Table 1 are an omnibus test of the model coefficients used to evaluate the goodness-of-fit of logistic models, and Model 1 shows a good fit as there is a significant improvement in fit as compared to the null model, $\chi^2(5) = 108.179$, $p = 0.000$.

Table 1. Omnibus tests of Model 1 coefficients (including all independent variables)

Step 1	Chi-square	df	Sig.
Step	108.179	5	0.000
Block	108.179	5	0.000
Model	108.179	5	0.000

The model summary of Model 1 in Table 2 provides the pseudo R-square values, including the Cox & Snell R-square and the Nagelkerke R-square, which are both methods of determining the explained variation (Hasan, 2020). The Nagelkerke R-square, which is an adjusted version of the Cox & Snell R-square, is generally used for interpretation. Therefore, the explained variation in the dependent variables based on Model 1 is 15.8%.

Table 2. The model summary of Model 1 (including all independent variables)

Step 1	-2 Log likelihood	Cox & Snell R-square	Nagelkerke R-square
	1080.884	0.118	0.158

Note: Estimation terminated at iteration number 4 because parameter estimates were changed by less than 0.001.

According to Table 3, the classification table indicates that Model 2, which included all independent variables, can predict the adoption of international

cryptocurrency trading platforms with an accuracy rate of 66.3% of cases when there is a cut value of 0.500 or when the scope of acceptance is 50%.

Table 3. Classification of Model 1 (including all independent variables)

Observed		Predicted		
		Using international platforms		Percentage correct
Step 1	Using international platforms	No	Yes	
			No	263
	Yes	132	306	69.9
Overall percentage				66.3

Note: The cut value is 0.500.

The significance level of each independent variable is presented in Table 4, showing that the adoption of international cryptocurrency trading platforms can be described by two independent variables: *Gender* ($\chi^2(1) = 44.472, p = 0.000$) and *Education* ($\chi^2(1) = 7.883, p = 0.005$). However, *Age*, *Occupation*, and *Income* are not significant. The odds ratio (OR) of 0.626 indicates that males are 62.6% (1 - 0.374) less likely than females to use international cryptocurrency exchanges. In addition, when there is a 1-unit increase in the education level, the adoption of foreign cryptocurrency trading platforms will rise by 1.514 times.

Table 4. Variables in Model 1 (including all independent variables)

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Age	-0.271	0.139	3.787	1	0.052	0.762
Gender	-0.984	0.148	44.472	1	0.000	0.374
Occupation	0.492	0.255	3.724	1	0.054	1.636
Education	0.415	0.148	7.883	1	0.005	1.514
Income	-0.121	0.076	2.567	1	0.109	0.886
Constant	0.347	0.492	0.496	1	0.481	1.414

Note: Variables entered in Step 1: Gender, Occupation, Age, Education, and Income in THB.

Since the significant variables in Model 1 are *Gender* and *Education*, they then were included in Model 2. Hence, there are only two independent variables in this model. Table 5 presents the overall test of Model 2. The omnibus test of the model coefficients, which is used to test the model's fit, indicates that the overall model is statistically significant with the Chi-square of 61.642 at a significance level of 0.05 ($\chi^2(2) = 61.642, p \leq 0.05$) showing that Model 2 has a good fit.

Table 5. Omnibus tests of Model 2 coefficients (including only significant independent variables)

Step 1	Chi-square	df	Sig.
Step	61.642	2	0.000
Block	61.642	2	0.000
Model	61.642	2	0.000

Table 6 shows the outcomes of the Cox & Snell R-square and the Nagelkerke R-square, which both compute the explained variation, from the model summary of Model 2, which included only significant independent variables. The Nagelkerke R-square, a frequently employed pseudo R-square, indicates that the model might account for roughly 9.2% of the variation in the results with a significance level of 0.05.

Table 6. The model summary of Model 2 (including only significant independent variables)

Step 1	-2 Log likelihood	Cox & Snell R-square	Nagelkerke R-square
	1127.421	0.069	0.092

Note: Estimation terminated at iteration number 4 because the parameter estimates were changed by less than 0.001.

The classification of Model 2 in Table 7 indicates that the model with only significant independent variables can predict the adoption of international cryptocurrency trading platforms with an accuracy rate of 63.1% of all cases when there is a cut value of 0.500 or when the scope of acceptance is 50%.

Table 7. Classification of Model 2 (including only significant independent variables)

Observed		Predicted		
		Using international platforms		Percentage correct
Step 1	Using international platforms	No	Yes	
			No	284
	Yes	181	257	58.7
Overall percentage				63.1

Note: The cut value is 0.500.

According to Table 8, when including only significant independent variables in the model, at the 5% level, binary logistic regression indicates that only gender is a significant predictor of selecting an international cryptocurrency exchange platform

in Thailand ($\chi^2(1) = 58.321$, $p = 0.000$). Another predictor, which is education, is not significant. The OR of 0.337 suggests that males are 66.3% (1 - 0.337) less likely than females to adopt international cryptocurrency trading platforms.

Table 8. Variables in Model 2 (including only significant independent variables)

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	-1.089	0.143	58.321	1	0.000	0.337
Education	-0.126	0.118	1.146	1	0.284	0.881
Constant	0.889	0.259	11.739	1	0.001	2.433

Note: Variables entered in Step 1: Gender and Education.

5. DISCUSSION

As there was uncertainty about introducing a withholding tax to every transaction of cryptocurrency exchanges in Thailand, cryptocurrency investors may be compelled to transfer to international trading platforms. Two models were conducted for a binary logistic regression analysis to determine the factors that Thai investors consider while selecting cryptocurrency exchanges. Model 1 contained all dependent variables (*Age, Gender, Occupation, Education, and Income*), whereas Model 2 included just the significant independent variables analysed in Model 1. When the scope of acceptance is 50%, Model 1 has a 66.3% accuracy rate in projecting the adoption of international cryptocurrency trading platforms, while Model 2 has a 62.6% accuracy rate. Model 1 clearly gives a greater rate of accuracy than Model 2. The discussion is thus based on Model 1. According to Model 1, gender and education level impact Thai investors' selection of overseas cryptocurrency trading platforms; however, age, occupation, and monthly income have very little influence.

Findings show that men are less likely than women to use cryptocurrency exchanges in other countries. In other words, men are more likely to use local platforms than women. Some empirical research indicates that women's risk-taking behaviours differ from those of males and that they are more cautious than men (Senkardes & Akadur, 2021). Foreign crypto exchanges like Binance, rated number one, may provide a lesser risk than Thai platforms like Bitkub, ranked number 52 (CoinMarketCap, n.d.). Hence, this may explain the results. Many studies have examined the gender influence on financial risk-taking. For instance, Wang et al. (2011) found in their study on gender-based financial investment preferences that women view art, antiques, and precious metal investments as alternative investments that are less risky than those of men. The passion that women have for these alternatives influences their financial decisions. Shrestha et al. (2020) also discovered that women are less risk-tolerant than men. Not only do male and female risk tolerances differ consistently, but so do their views of the potential advantages and risks associated with taking chances. According to Brooks (2019), a potential explanation for women's lower risk-taking in the context of financial investment is that they are less optimistic than men and, as a result, more likely to conclude that available risk premia are insufficient and, thus, more likely to withdraw from risky assets when confronted with negative information.

The findings also imply that the adoption of international cryptocurrency trading platforms will increase 1.514 times for each unit increase in education level. This indicates that users with a greater level of education are more likely to use overseas crypto exchanges than those with a lower level of education. Overseas platforms may be more complex and need more expertise than local ones, particularly when foreign fiat currencies are converted to Thai baht. It is well recognised that an individual's degree of education impacts their social environment, and it is also common for individuals to act in accordance with their social environment. As such, individuals with a high level of education do several studies and exams prior to making investment selections based on their social surroundings and degree of education (Senkardes & Akadur, 2021).

6. CONCLUSION

In order to investigate the factors affecting Thai investors' selection of cryptocurrency exchanges, a binary logistic regression analysis was performed. The study examined whether demographic characteristics (age, gender, occupation, education, and monthly income) influence Thai investors' decisions about using foreign cryptocurrency trading platforms. The results reveal that gender and education level have a considerable impact, but age, occupation, and monthly income are negligible. Here are some suggestions based on the findings of the study: When planning marketing initiatives, the research proposes that local crypto exchange providers should consider their clients' gender and educational background, as these characteristics have a substantial influence on platform selection. As women are less risk-tolerant than men, they are more likely to use foreign platforms than men. If a blockchain ecosystem provider is interested in this group of customers or believes that female clients have market growth potential, they may need to improve their credibility or familiarize these users with the platform. If these clients have confidence in a platform, they may choose to invest in a local platform. In addition, as the usage of overseas platforms increases with education level, adverts geared at those with bachelor's and master's degrees may attract more new users than those aimed at those with a high school education. This study may be helpful to cryptocurrency exchange providers in understanding how their consumers behave so they can develop policies or advertising campaigns to draw in new customers or keep their current clientele from switching to alternative platforms. While many studies are consistent with this study

and can explain the findings, the underlying reasons why gender and education are relevant to Thai investors when deciding between local and international cryptocurrency platforms have not been investigated. Thus, such aspects must be

explored and analysed in future research. In addition, an in-depth interview or a focus group interview may be performed to get a better understanding of why investors choose these cryptocurrency exchanges.

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