



Financial Literacy of Cryptocurrency Users in Indonesia and Factors Affecting The Investment Decision

Nur Imamah¹, Layyin Nafisa²

^{1,2}*Department of Administrative Science, Universitas Brawijaya*

*Corresponding author. Email: Layyinnafisa@ub.ac.id

ABSTRACT

Cryptocurrency has raised its popularity in the past five years including its entrance in Indonesia. With the characteristics of a highly populous country and the highest internet penetration within the region, the enthusiasm for cryptocurrency usage cannot be separated from the influence of internet traffic and social media usage. The cryptocurrency investment comes from various factors encouraging the transaction including social media influencers, fast information exchange through the internet, and public figure aspiration. These collective factors have been the main idea to be evaluated in this research to deliver the motif behind cryptocurrency investment. Furthermore, the phenomenon of instant investors gaining significant profit and in contrast to the severe failure experienced by cryptocurrency investors becomes a motivation to assess the financial literacy of the cryptocurrency investor in Indonesia whether there is a potential for herd investment behavior using Lusardi Financial Literacy Theoretical Framework. This research aims to investigate the financial literacy level of cryptocurrency investors. Furthermore, the secondary purpose of this research is to explore cryptocurrency investment factors in Indonesia. The cross-sectional study conducted in this research is used for analytical and descriptive purposes. The descriptive nature of this study measured the financial literacy and risk awareness towards cryptocurrency in Indonesia, whereas the analytical nature of the study answered what motifs underlying investment decisions concerning social media influence and speculation motifs. The questionnaire was designed to gather data through a survey consisting of quantitative data analysis questions where the respondent answers multiple choice questions and the statistical data gathered from the survey is analysed in the numerical rating and scoring describing an element of the measurement framework used by Lusardi Financial Literacy Matrix. The research concludes several hypotheses are confirmed through the findings, including that investors do not fully understand the mechanism and technology behind cryptocurrency but the hypothesis on the minor amount invested is not proven in this study. Secondly, there is a speculation motif in investing in cryptocurrency confirmed in this study. The third hypothesis also confirmed that social media influencers play an important role in giving the inspiration to invest in cryptocurrency. Furthermore, investors are somewhat aware of the risks of cryptocurrency investment. And lastly, some investors are aware of the chosen cryptocurrency using market observation, and some are following the trends from social media and news.

Keywords: *Digital currency, Cryptocurrency, Financial literacy, Herd behavior.*

1. INTRODUCTION

Since entering Indonesia for the first time in 2013, cryptocurrency has been increasing its popularity among investors. Starting from 2020 specifically, the increase of users is raised to 80% with the total number of cryptocurrency users up to 7.4 million users which brings the country to the top 7th of most cryptocurrency users by 2022 [1]. This fact can be driven by a focus on looking at the possible cause within the past two years of timeframe and focusing on what potentially influences the decision-making and behavior. Regardless of the regulatory challenge that has not allowed cryptocurrency to be used as payment tools [2], regulatory bodies have recognized 229 cryptocurrencies as crypto asset trading commodities and investments [3]. The fame of cryptocurrency as an investment instrument was continuously raised with the public figures and social media artists' involvement in the platform. The excitement toward new instruments was also studied by the previous researcher in Indonesia through behavioral finance modeling resulting in Indonesian investor overconfidence bringing a significant positive effect on investment decisions [4].

With the highly penetrated social media country, one phenomenon of the "Ghozali effect" shook Indonesia in early 2022 where a 21 years old student sold NFT of his face valued at 317 Ethereum [5], the rise of newcomers in the crypto asset trading floor raised significantly. The event has shown the public a modern way to earn a "quick return" with minimum capital right in the middle of a high number of unemployed people caused by the pandemic and recession. A sudden trend of excitement towards cryptocurrency investment should be in line with the level of literacy mainly from the investors themselves to avoid instability in the economy caused by the investment behavior and avoid

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speculation motifs as well her behavior without a clear fundamental purpose. These observations of trends from real-life events have been the initial rise of problem identification in this research and backed into a hypothesis.

The historical event breakdown leads to the first hypothesis of motifs for cryptocurrency investors in Indonesia, a speculation motif. Following the same phenomenon, the speculation motifs need to be assessed to whether the investors understand the risk associated with the instrument they are investing in, this draws a highlight for the second and third hypotheses on investors somewhat aware of the risk in cryptocurrency investment yet do not fully understand the mechanism and technology behind cryptocurrency. Whilst every investment option carries potential gain and risk, mandatory basic knowledge of the investment instrument is necessary. With the hype of newcomer investors and the fast spread of information with the fact of high internet penetration data, social media influences the decision to invest in cryptocurrency leading to becoming the fourth and the fifth hypothesis in this research regarding how investors choose the currency that they are investing in.

On the other hand, the phenomenon of suicide students due to losing money on cryptocurrency also happened within the country. The perspective of easy return on cryptocurrency-related investment had invited people to jump onto the platform immediately. Post pandemic has also created a more digitized way of living, people spend more time virtually. Consuming news, pop culture, new learning platforms, and exploring digital instruments.

The phenomenon of a sudden increase in cryptocurrency investors in the past two years starting in 2020 has narrowed down the focus on finding what causes the major influence and studying the behavior of investor decision-making based on. Data derived from the Indonesia Crypto Outlook Report of 2021 released by collaboration from the Indonesian Blockchain Association, Indonesian Crypto Network, and Indonesia Bitcoin and Crypto Exchange shows several facts including blockchain and crypto asset growth since 2016 for the past 5 years compounded to 1,495%. This fact is also supported by McKinsey & Company findings where Indonesia placed the highest digital adoption in the world with 99% adoption growth in 2014- 2017. With the largest and fastest-growing internet economy, several focuses can be drawn into a hypothesis underlying the research. The relationship between high digitalization and the pandemic COVID momentum is potentially driving the cyber activity to increase including investment and trading activity. Nevertheless, what has driven specifically to raise the cyber investment activity into cryptocurrency is the key motif to be found in this study.

Empirical findings of cryptocurrency impact on perceived benefits and usage behavior using technology acceptance frameworks highlighted the relationship between the two is not significant, therefore the previous researcher concluded the need to further examine the influence of cryptocurrency usage [6]. Hence, the hypothesis towards the influence of public figures and social media news will be one factor examined as a motif in this study. Herd behavior in cryptocurrency investment also found in the previous study where strong and significant result and influencing transformation from individual to institutional investors [7].

Another unique point to consider regarding choosing the country subject to this research is the demographic situation where religion plays an important role in setting up the value and converting to rules and regulations in many sectors including economy and investment. The population consisted of five religions with 88% majority being Muslims. While the rules are still debated within religious organizations including the Islamic Scholarly Body on whether to legalize cryptocurrency trading since the nature of cryptocurrency does not have an underlying economic value. The absence of underlying value of the investment is debated from the perspective of speculation and uncertainty, this is against the principle of trading in Islam that does not allow "gambling" elements in conducting transactions. Therefore, the current state of cryptocurrency trading is still prohibited by the Indonesia Islamic Scholarly Body since it does not meet the standard of Islamic financial trade law which requires the commodity to have a physical form, true value, and ability to be handed over to the buyer in forms of goods or service [1]. Regardless of the debate on the legalization and regulation by a religious body, the enthusiasm toward cryptocurrency is massive, and transactions as investments have been done across the country.

With all the mentioned factors, there is a hypothetical link that will be examined throughout this research project between how much level of understanding towards cryptocurrency investment, the motifs underlying investment decisions, how much social media usage influences decision-making for investors, do investors have a solid understanding of the risk associated with cryptocurrency and is there any potential of speculation motifs underlying investment, and if there is a herd behavior towards the investment trend created by social media influencers.

With the demographic characteristics of a highly populous country and part of the fastest digitalization region, herd behavior is potentially underlying the motifs in investment behavior, especially with the latest instrument cryptocurrency. The precedent characteristics have created high volatility with speculation motifs underlying the investment. Therefore, understanding the literacy and motifs behind the cryptocurrency investor becomes the major aim of the research. To reach the aim, the following detailed objectives are considered:

- Primary aim: To assess financial literacy within the scope of cryptocurrency as an investment and commodity in Indonesia

- Secondary aim: To conclude the motifs underlying investment of cryptocurrency in Indonesia.
- Objectives: Quantitative research-based questions will be conducted with samples of Indonesian cryptocurrency investors to complete a questionnaire with the view to examine the motivation of investment and correspondent understanding towards the instrument as well as risk simulated.

To cover the above research problem, a theoretical framework of financial literacy from Lusardi will be used in this research. There are four aspects of the financial literacy objective interpreted by Lusardi. First, beyond knowledge and understanding of finance, the purpose of financial literacy is to promote effective decision-making. Second, to improve well-being as a whole. Third, broader impact on society. Fourth, inclusive of the economy for young people [8].

This study will answer the following questions:

1. Do investors understand the mechanism of cryptocurrency and the technology behind it?
2. What are the motifs and influences of investing in cryptocurrency?
3. To what extent are investors aware of the risk associated with cryptocurrency investment?
4. How do investors choose units of cryptocurrency invested?

With all the mentioned factors, there is a hypothetical link that will be examined throughout this paper between levels of understanding towards cryptocurrency investment, what the motifs underlying investment decisions, how much social media usage influences decision-making for investors, do investors have a solid understanding towards risk associated with cryptocurrency and is there any potential of speculation motifs underlying investment, and if there is a herd behavior towards the investment trend created by social media influencers. Based on the background context and phenomenon from precedent findings, the hypothesis is set as the following prior to gathering data through a questionnaire:

1. Investors do not fully understand the mechanism and technology behind cryptocurrency due to a minor amount of investment.
2. There is a speculation motif in cryptocurrency investment.
3. Social media influencers play a significant role in cryptocurrency investment.
4. Investors are aware of the risk of cryptocurrency investment.
5. Investors choose a unit of cryptocurrency invested using market observation and following the trends from social media and news.

Even though the financial literacy assessment has been done in several research before [9], this project will fill the gap of knowledge in the focus of investor literacy towards cryptocurrency as the latest financial instrument investment. Previous research on cryptocurrency in Indonesia after it was legalized in 2020 was based on psychological and behavioral finance. The previous research conducted in Indonesia was also descriptive towards gathering data on geographical and gender and education towards investment. Therefore, this research project will bring an explorative insight into the motif of people investing specifically in cryptocurrency and the knowledge of risk and return of cryptocurrency.

Nevertheless, by understanding the motif of investment and accessing the literacy level of cryptocurrency investors in Indonesia, a greater impact on policy implementation or further necessary action can be undertaken based on the insight. In creating economic growth from investment sectors yet maintaining stability and refraining from investment pop culture only creates a momentum wave and left financial instability afterward. Furthermore, this research can also be initial findings on financial inclusivity further in Indonesia.

1.1. Regulatory context

Major economic and financial activities in Indonesia are regulated by the Ministry of Trading, Ministry of Financial Affairs, Ministry of Economics, and Central Bank of Indonesia. Particularly regarding investment and commodity trading activities, specifically cryptocurrency trading and exchange activities are regulated by the Ministry of Trading. In 2018, the ministry imposed General Policy and Regulation number 99/2018 regarding public policy on cryptocurrency asset trading which stated that crypto asset is categorized as a commodity that can be subjected to term contracts to be traded in the future exchanges market. Secondly, further detailed mechanisms of which cryptocurrency can be traded in the future exchange market are going to be overseen by Indonesia's Commodity Futures Trading Regulatory Agency (BAPPEBTI). Following the regulation issued by the Ministry of Trading, BAPPEBTI has issued guidelines on regulation and oversight of trading activity following the high demand for cryptocurrency in Indonesia

including the selection and acknowledgment of specific cryptocurrencies that are allowed to be legally traded in Indonesia. 229 lists of cryptocurrencies are allowed to be traded in Indonesia and platform trading needs to be recognized by BAPPEBTI as well. Nevertheless, the BAPPEBTI Regulation No.5/2019 and Regulation No.7/ 2020 still prohibit cryptocurrency as a payment mechanism, and conversion to fiat money has to be conducted through an authorized crypto merchant.

Therefore, it can be concluded that transactions of cryptocurrency in Indonesia are legalized for investment reasons only with a specific instrument determined by the Regulatory Bodies and a specific mechanism of conversion by a listed trading platform to avoid uncontrollable volatility against fiat money.

1.2. Investor behavior and behavioral finance

Investments are entitled to two factors: risk and return. The study of financial economics for consumer behavior is referred to as behavioral finance to find the pattern of financial incentives and motifs underlying investment decisions. Behavioral finance includes a psychological aspect in determining factors of why an investment has been made in a certain way. There are several theories supporting behavioral finance including traditional finance which follows the principle of efficient market hypothesis by Fama 1970, Portfolio Management Theory by Markowitz 1952, and the Capital Assets Pricing Model by Sharpe, Lintner, and Black 1972 with common stands of investor behavior reflecting a stock price [10]. The traditional theory then evolved over time bringing the element of the behavior aspect of investors and the psychological aspect affecting financial decision making. Whilst the theory of behavioral finance aims to understand the path and pattern to draw a conclusion in decision-making.

1.3. Social media usage in Indonesia

Indonesia has scored as the highest digital adoption country since 2014 supported by high internet penetration. The effect of the pandemic Covid-19 has accelerated the digital consumption of the Indonesian population including financial services. This has been marked by the rise of e-wallet transactions from 18% to 25% according to findings from the Indonesian Blockchain Association, 2021. Indonesia contributes as one of the highest internet users in the world with a total number of 204.7 million users with a penetration rate of 73.7% by January 2022 [11]. This state of digitalization plays a major role to be considered in this study of cryptocurrency as the main infrastructure supporting the transaction is the internet. A previous study in Japan has shown crypto asset owners tend to use cashless payment methods compared to nonowners [12]. Therefore, it is intertwined with the phenomenon of internet users and cryptocurrency user numbers rising. Nevertheless, cryptocurrency factor momentum is proven to originate from price momentum [13].

While social media usage could promote psychological behavior in various ways such as creating trends and potential herd behavior including investment activity, the extensive use of social media including Instagram, Facebook, Twitter, WhatsApp, Telegram, YouTube, TikTok, etc. are examined during the study to find whether the outstanding statistics number of 191.4 million social media users in Indonesia [11], had impacted the spread of information and endorsement of social media influencer bring motifs of investment. Whilst the study showed opportunities created through intensive social media influencers and endorsements in Indonesia, the concept of social media cannot be separated when conducting a survey regarding digital influence including cryptocurrency investments which in nature are based on the internet. Proven by the previous study of news influence found significantly in creating sentiment towards the cryptocurrency market [14]. The sentiment also proved to bring significant power in price prediction in the previous study [15], as well as the sentiment towards another instrument [16].

1.4. Theoretical framework

While several literacy measurements have been researched previously using numerous standards such as attributes of supply, regulation, transaction, third party, transfer, initial offering, and conversion [17], financial literacy dimensions and areas by Lusardi are adopted as a framework in formulating a questionnaire in this research with contextualization into the current situation of cryptocurrency investors in Indonesia. The theory of financial literacy by Lusardi emphasizes the three dimensions of content, processes, and contexts. The element of content consists of four areas including money and transactions, planning and managing finances, risk and rewards, and financial landscape. Furthermore, the dimensions of processes include the identification of financial information, analyzing the information to context relevant, evaluating the financial issue, and applying financial knowledge and understanding. Lastly, the dimension of context literacy consists of four dimensions including education, home and family, and individual and societal [8].

Table 1. Financial Literacy Dimensions

Financial literacy dimensions		
Content	Processes	Contexts
Financial literacy dimensions areas		
Money and transactions	Identifying financial information	Education
Planning and managing finances	Analyzing information in a financial context	Home and family
Risk and reward	Evaluating financial issues	Individual
Financial landscape	Applying financial knowledge and understanding	Societal

The theoretical framework in assessing financial literacy is set to be the framework in critical thinking on the design of the research by implicating elements of contextualization of cryptocurrency investment. Therefore, each dimension is covered through a translation of the current situation fulfilling the framework.

1.5. Empirical review

According to previous research conducted on financial literacy and cryptocurrency attitude, there is a negative implication for those with high financial literacy and cryptocurrency ownership [18]. The researcher also found the explanation for the matter: people with high financial literacy tend to not invest in cryptocurrency due to the perception of the risk entitled to cryptocurrency. The research also supports the importance of financial literacy which has a direct connection to macroeconomic financial stability. While this study has given an early path on linking attitudes toward cryptocurrency measured by financial literacy, it brings further questions of what influences the decision-making of investment action. This further question will be raised in this research project.

Based on previous research done by Kim, Kyoung Tae & Hanna, Sherman & Lee, and Sunwoo, the respondents who owned a cryptocurrency tended to have lower objective investment literacy scores compared to non-cryptocurrency investors [19]. Furthermore, the overconfidence level in investment was found to be higher in cryptocurrency investors compared to non-cryptocurrency investors [20]. The research has been done by designing a control group and dependent variable to measure objective investment literacy. The findings encouraged further findings on this research project by understanding whether the high penetration happening in Indonesia is currently also based on overconfidence that can be implied as speculation motifs or actually based on a solid understanding and literature towards the investment instrument.

A stochastic spanning methodology research was done testing the cryptocurrency diversification benefit to risk-averse investors. The numerical study with a model implemented in the research has a fundamental linkage between risk and cryptocurrency investment [21]. However, it has not covered awareness of the risk by each investor regarding cryptocurrency. This gap of findings will be pursued in this research.

A study of determinants of investment in cryptocurrency investors in Indonesia done by Nurbarani, B. S., & Soepriyanto, G suggested overconfidence concerning cryptocurrency investment has a positive effect and that herd behavior does not affect decision-making in investment [4]. The research however only focuses on a specific city, Greater Jakarta instead of picturing the whole country’s representation. Furthermore, the research was conducted for those who have invested in cryptocurrency and non-cryptocurrency investors. While the research gives insightful findings on the variable determinant and distinguished by demographic factors, it becomes a foundational research question to be answered on what influences the investor to perceive overconfidence. This research project will further pursue the findings on herd behavior exclusively for investors with ownership of cryptocurrency. Furthermore, this research will enrich the representation of the respondent on a larger scale at the country level and emphasize more the motifs of investment rather than the detailed demographic background.

Herd behavior in cryptocurrency investment has also been examined through research with emphasis on the quantitative method through the CAPM model with the assumption of investor and asset market as a rational variable [22]. The research however does not detect the motifs underlying the investment rather than looking at the number of yields directly. Therefore, in this research, the gap in findings in terms of motifs will raise problem identification.

The review of the previous studies has shown various motifs on how investors behave in making a financial decision including the source of influence and education regarding the literacy of investment itself. The level of literacy often disintegrated intending to gain profit resulting in speculation motifs which become the main concern in preventing seasonal investment bubbles that can be uncontrollable at a larger scale. Nevertheless, the momentum within the observed time frame is highly impacted by the COVID-19 pandemic which has significantly increased remote behavior

in overall sectors which leads to high penetration of digitalization and internet usage including investment. In line with previous findings where covid-19 significantly moderates risk uncertainty in investment behavior towards financial markets [23]. With the rise of time consumed digitally by each person, social media receive more attention in contributing to manifesting a digital activity including cryptocurrency investment.

Through all the collective contextual background explained and reviewed above, the main issue in this research is to assess the financial literacy of cryptocurrency investors and understand the motifs behind the investment. Further questions from various findings done by precedent researchers still have a gap to be answered through several research questions in this research including whether investors understand the mechanism of the instrument they invested in as cryptocurrency, what are motifs and were the influence to invest in cryptocurrency comes from, how much investors aware of the risk associated and how do they choose the crypto investment.

The questions raised in this research will fill in the gap in the previous studies on cryptocurrency in Indonesia by finding out the hypotheses.

By answering the research question raised in this research project, a handful of insights on understanding future necessary action on how to educate the cryptocurrency investor regarding investment options and decision-making can be done more effectively by authorized bodies. Nevertheless, understanding the relation of influence motivating investment can prevent instability in the economy resulting from an investment bubble without a strong fundamental principle such as speculation or herd. Lastly, by understanding the major source influence of investment, effective necessary action can be done by utilizing those influences as an effort to establish inclusivity in investment and stable economic growth from the sector of investment, specifically cryptocurrency.

2. METHODS

In conducting this research project, a theoretical framework is outlined for analyzing and interpreting the data collected through questionnaires from various respondents. The issue raised in the research emphasizes on measuring the financial literacy and awareness of the risk associated with cryptocurrency for investors in Indonesia as well as exploring motifs of investment. This research project is considered as a basic research purpose with the objective to fill the knowledge gap of cryptocurrency study specifically in Indonesia which can further be developed into comprehensive research on solving the key issue concern. To conclude insightful findings of those aims, the research was delivered by answering major questions of what motifs and influences to invest in cryptocurrency, to what extent are investors aware of the associated risk, and what influences them in choosing which cryptocurrency to invest in. The hypothesis is set to be benchmarked over the observation of the current phenomenon where potential speculation motifs of investment underlying the behavior of investors, therefore the investment decision is potentially influenced by trends from social media and investors somewhat aware of the risk associated with cryptocurrency investment.

The study was conducted through a cross-sectional survey where the appropriate method in designing a survey was used to facilitate issues raised in reality to gather primary data. The data was collected from many different respondents at a single point in time without influencing the way they responded; hence no experimental and control groups were necessary to be formed in conducting this research. The cross-sectional study conducted in this research was then used for analytical and descriptive purposes. The descriptive nature of this study measured the financial literacy and risk awareness towards cryptocurrency in Indonesia, whereas the analytical nature of the study answered what motifs underlying investment decisions in relation to social media influence and speculation motifs. Furthermore, the research also fits into an exploratory nature where the findings developed through a theory yet further developed into the recent contextual situation.

The independent variable in this research is also referred to as the explanatory variable since it explains an outcome. Independent variables in this research are categorized into the subject variable where the result and situation cannot be manipulated by the researcher. The subject variable in this research is the correspondent who fulfills the criteria of Indonesian nationality and has invested in cryptocurrency. This respondent was not categorized as a between-subject designed experiment nor a within-subject experiment since the research was conducted with only one condition and compared the results among respondents without any interference from different scenarios. The dependent variables or criterion variables in this research include elements of financial literacy towards cryptocurrency, awareness of the risk associated when investing in cryptocurrency, and motifs underlying the investment.

The questionnaire was designed in gathering data through a survey consisting of quantitative data analysis questions where the respondent answers multiple choice questions and the statistical data gathered from the survey is analyzed in the numerical rating and scoring describing an element of the measurement framework used by Lusardi Financial Literacy Matrix.

2.1. Population

The population selected in this research project are cryptocurrency investors in Indonesia from the age of 21 and above. The wide range of correspondents is set to gain a variety of populations in answering the hypothesis. The initial demographic question was set to ensure the participant's nationality is Indonesian. Several other demographic questions such as age group, occupation background, and educational background are anonymously delivered to understand the group of respondents to the questionnaire.

The population comes from different regions within the country and the questionnaire spread through several social media without limiting the geographical situation in the country. Initially, the survey was aimed to reach 70 -100 respondents. However, due to the intense questionnaire that consists of 54 questions and the specific background of respondents limited to those who have invested in cryptocurrency, this result was sufficient by gathering 50 insightful respondents. Quantitative data was collected and then analyzed using descriptive statistics in JASP software to conclude collective answers.

2.2. Sample size and technique

In designing the method of choosing representative sampling from the total population in obtaining data for the study with several considerations. First, the number of representative samplings is considerably informative to draw conclusions based on the fact that each of the respondent's backgrounds has narrowed down to those who own cryptocurrency investments. Secondly, the available time frame for doing the project is also considered in the design research data gathering. Finally, the combination of voluntary responses and convenience random sampling underlies the sample selection for participants of the survey.

The sample size is narrowed to 50 respondents among populations. The sampling method used is probability sampling with the chance of every member of the population being selected and is mostly used in the quantitative research approach. In this research project, the probability sampling distribution is narrowed to one method of specifically using simple random sampling where every member of the population has an equal chance from one another without any stratification or classification of clusters. Respondents were then chosen by voluntary response sampling based on access to the online survey.

2.3. Material

The quantitative technique of data collection is used in conducting this research through materials of a questionnaire survey consisting of 54 comprehensive questions to be answered by participants. The questionnaire is developed online using Google Forms as a tool for conducting the survey. The online links referring to the survey are published in several telegram public groups of scholars, the cryptocurrency community, and on social media such as WhatsApp groups and Instagram posts. The link redirects to the survey and can be completed approximately within a 20–30-minute timeframe. The survey was aired for approximately 8 weeks with results computed directly by an Excel file generated through the Google Forms feature. The questionnaire referred to exploratory answers to the research questions imposed and comprehending the financial literacy framework by Lusardi. The questions are adapted from Likert-type questions and statements asking inquiring about the opinion of participants in 5 possible responses: strongly disagree, disagree, neutral, agree, and strongly agree. Furthermore, the type of close-ended questions with few possible answers was also presented. Therefore, the responses gathered from the respondents were then scored at an interval level of totaled items and subscales using Excel and JASP statistical software.

2.4. Data collection procedure

The research questionnaire as a source of primary data collection has been spread out through online links for 8 weeks. A quantitative approach using Google Forms with anonymous respondents assigned and broadcasted through public social media links with no limitation on the geographical situation within the country. The target respondent is required to have the basic requirement which is Indonesian nationality and cryptocurrency investment. The link has been widely broadcasted to different kinds of background populations including telegram groups, WhatsApp, and Instagram. This allows the questionnaire to reach various characteristics of the social media users and allows inclusivity of different sample representatives. Quantitative data was collected and then analyzed using descriptive statistics in JASP software to draw conclusions from collective answers.

3. RESULT AND DISCUSSION

3.1. Financial literacy

The cryptocurrency investor literacy towards the instrument itself is scored through the favorability of the option from four dimensions including:

1. Allocation of funds regarding awareness of risks

The question asked whether the investors allocate a big portion of their savings into cryptocurrency or a small portion due to awareness of their lack of knowledge in cryptocurrency or their confidence in cryptocurrency. The allocation also grouped with whether investors were prepared with the risk of losing the investment and confidence in their capacity to manage the investment. The questionnaire numbers 29, 37, 40, 41, 42,43 describe statistically a group of funds allocated by the investors in measuring their level of literacy and found the statistics generated by JASP software to indicate the highest score and standard deviation within the group.

Table 2. Questionnaire Number 29 until 42

	Valid	Missing	Mean	Std. Deviation
29. I have prepared to risk the money I have invested in cryptocurrency	51	0	3.765	1.031
37. I have a confident knowledge and capacity in managing my investment	51	0	3.216	1.045
40. I allocate big portion of my savings in cryptocurrency since I believe in my knowledge regarding the investment	51	0	2.392	1.041
43. I allocate small portion of my savings in cryptocurrency since I do not have a proper knowledge in cryptocurrency	51	0	3.471	1.046
41. I allocate small portion of my savings in cryptocurrency since I believe in my knowledge regarding the investment	51	0	3.000	1.114
42. I allocate big portion of my savings in cryptocurrency even though I do not know exactly when the value increase or decrease	51	0	3.627	1.038

The result shows a high score in the statement that investors have prepared to risk the money invested in cryptocurrency. Furthermore, the investors show awareness of the lack of knowledge in cryptocurrency as it is relatively a new instrument, thereby stating that they invest a small portion of their savings since the investors do not have proper knowledge of cryptocurrency. This findings supports previous study in Malaysia where cryptocurrency investors perceive value more in comparison to risk [24].

29. I have prepared to risk the money I have invested in cryptocurrency

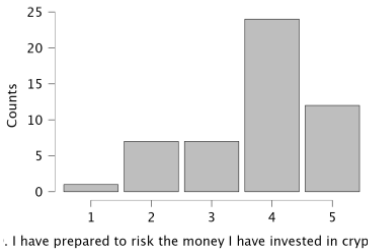


Figure 1 Questionnaire Result Number 29

37. I have a confident knowledge and capacity in managing my investment

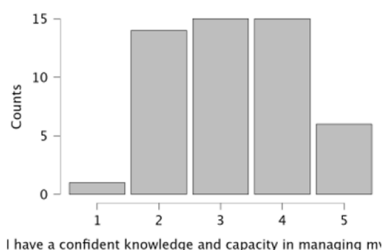


Figure 2 Questionnaire Result Number 37

The highest result on standard deviation comes from the question regarding confidence knowledge in managing capacity where responses are equally varied among investors.

Therefore, the confidence and awareness level of investors affects how much they are willing to allocate funds to be invested in cryptocurrency. The result shows an indication of speculation motifs where investors are willing to allocate a large portion of their savings even though they have no proper understanding of the volatility of when the value of cryptocurrency is volatile.

2. Confidence in financial knowledge

Question number 19 assessing literacy through the confident level of knowledge regarding cryptocurrency investment is varied among investors with the majority of the highest population claiming not having enough confidence regarding the investment.

42. I allocate big portion of my savings in cryptocurrency even though I do not know exactly when the value increase or decrease

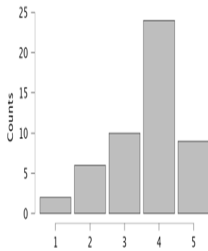


Figure 3 Questionnaire Result Number 42

19. I have confident knowledge regarding financial investment of cryptocurrency

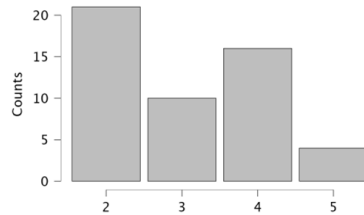


Figure 4 Questionnaire Result Number 19

3. Confidence in technological knowledge behind cryptocurrency used

The third dimension as content to measure the literacy of investors is found through technology lies behind the instrument. The question assesses whether the investor understands the technology implemented in cryptocurrency and the result shows that the investor somewhat understands the technology used in cryptocurrency.

4. Awareness of risk and volatility as well as outside influence on market sentiment.

The literacy towards cryptocurrency was also assessed through a group of questions number 30,31,32,33,34,35,36 in the questionnaire where the awareness of risk, volatility, uncertainty, and market sentiment as well as the measurement of the volatility being inquired.

Table 3. Questionnaire Number 30 until 36

	Valid	Missing	Mean	Std. Deviation
30. I believe in the concept of higher risk higher return	51	0	4.196	0.800
31. I believe cryptocurrency investment is risky	51	0	4.000	1.000
32. There is high volatility in cryptocurrency	51	0	4.059	0.925
33. There is uncertainty in cryptocurrency	51	0	4.078	0.891
34. I believe the volatility in cryptocurrency is unmeasurable	51	0	3.882	0.840
35. I can measure the cryptocurrency volatility	51	0	2.490	1.138
36. I believe the market sentiment in cryptocurrency is highly influenced by news from public figure regarding their financial attitude and decision	51	0	4.039	0.774

The result shows that investors believe in the risk of cryptocurrency as well as volatility and uncertainty. The descriptive statistics also showed that investors believe the volatility is unmeasurable and they do not have the ability to measure it. Furthermore, investors believe that volatility and market sentiment are highly influenced by news of public figures regarding financial attitudes and decisions. This finding supports previous study done in Canada conducted with the subject of inexperienced potential investors and cryptocurrency investors with the result of extreme price volatility motivating investment decisions [25].

36. I believe the market sentiment in cryptocurrency is highly influenced by news from public figure regarding their financial attitude and decision

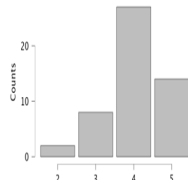


Figure 5 Questionnaire Result Number 36

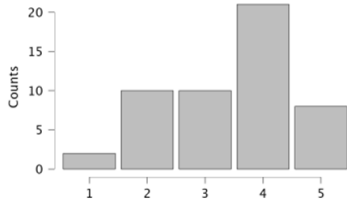
3.2. Motifs underlying investment

The research categorized several motifs in investment behavior towards cryptocurrency including:

1. Financial Investment planning

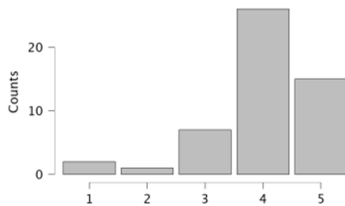
Questions 7,8, and 11 are grouped together in scoring the motif underlying investment is to manage a long-term financial investment. The result shows that the majority of cryptocurrency investors do not plan to use cryptocurrency as a long-term investment instrument nor actively trade cryptocurrency to earn profit. However, the majority agree to allocate the gain for future long-term agendas. This also indicates the hypothesis confirmation of speculation motifs.

15. I believe I could tap a higher social status by investing in cryptocurrency



believe I could tap a higher social status by investing in cr

17. I believe by investing in cryptocurrency I could engage with a new community



lieve by investing in cryptocurrency I could engage with a

Figure 6 Questionnaire Result Number 15 and 17

3. Community purpose

The second indicator of understanding the motifs of investment and the potential of herd behavior among investors was found in the response to questions asking about motivation to invest in cryptocurrency to gain social status

and engage with the new community. A high score on both answers confirmed that one of the motivations to invest in cryptocurrency is to reach a social status and community engagement among investors.

2. Financial-driven motifs

The third group of dimensional motifs is the financial desire, which is delivered through questions 14, 16, and 38. Questions regarding the opportunity to gain financial motives for investors found that high levels of motivation in a financial incentive by fulfilling financial goals sooner or new financial goals, even though the majority of investors do not try to make a fortune while aware of the risk in cryptocurrency.

Table 4. Questionnaire Number 14 until 38

	Valid	Missing	Mean	Std. Deviation
14. Cryptocurrency increases the chance to fulfill long-term financial goals faster	51	0	3.706	0.944
16. I believe I could set a new financial goal by investing in cryptocurrency	51	0	3.784	0.966
38. I heard the risk of cryptocurrency, but I would try my luck as some people who made fortune through cryptocurrency	51	0	2.294	1.101

3. Purpose of buying NFT

9. Do you use cryptocurrency to buy/ sell NFT (Non- Fungible Token) ?

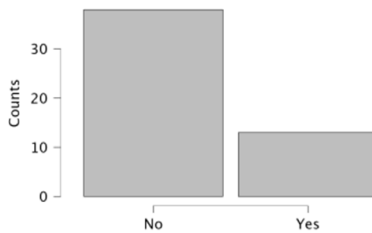


Figure 7 Questionnaire Result Number 9

Lastly, the literal case brought initially to be the problem identified comes from Ghozali Effect where the cryptocurrency involved due to an NFT transaction. However, most of the cryptocurrency investors were found to not have NFT transactions.

4. CONCLUSION

The rise of blockchain technology has manifested primarily in cryptocurrency investment. The combination of factors including internet penetration, social media information influence, and digitalization of covid-19 pandemic acceleration has created momentum in the past two years for cryptocurrency investors in Indonesia to rise exponentially. The enthusiasm for investing in the latest form of instrument raises concern about what motifs underlying the investment. The high exponential rise in cryptocurrency investors is observed through several hypotheses escorting the research process. One of the aims is to assess the financial literacy of cryptocurrency investors in Indonesia. Secondly, the research aimed to understand the motifs underlying the investment and its influence on decision-making. In order to avoid an investment bubble without a solid understanding of literacy and the risk associated, the measurement of literacy and risk awareness become the main aim of this research to prevent the latent effect of investment at a macroeconomic level. Furthermore, the importance of measuring literacy for those who have invested and creating awareness of the risk associated with understanding motifs of investment could be an initial step in gaining insight into educating investors to bring a greater impact on the economy.

The study found that literacy is categorized into four aspects including awareness of the technology behind cryptocurrency, measurement of risk and volatility in cryptocurrency investment, a portion of investment awareness, and financial investment aspect. The result shows that the average cryptocurrency investor has confident knowledge regarding the financial investment of cryptocurrency even though the majority of the investors do not have confident knowledge of the technology that lies behind the cryptocurrency such as the blockchain mechanism. Another dimension

used to measure literacy regarding awareness of risks and volatility found that cryptocurrency investors in Indonesia are aware of the concept of high risk and high return, volatility, uncertainty, and risk element of cryptocurrency and believe that there is no capability in measuring the volatility of cryptocurrency. Investors also believe that the volatility of the cryptocurrency market is highly influenced by news of public figure attitudes and financial decisions. Lastly, from the dimension of allocation toward investment, investors are aware of the potential of losing the investment with the basic understanding of the majority of investors allocating small portions of savings in cryptocurrency due to a lack of knowledge of the instrument.

The findings have highlighted the hypothesis of social media influence in the decision-making of cryptocurrency investment, investors are aware of the risk associated with cryptocurrency and have speculation motives in conducting investment transactions. Furthermore, literacy is approached through several dimensions that support the hypothesis that investors do not fully understand the mechanism and technology used in cryptocurrency yet invest a considerably small amount of investment which again, implies speculation motifs.

The findings on herd behavior in this study have supported a previous study [26], which stated that financial literacy does not influence the intention to invest in cryptocurrency. Furthermore, social influence found to be one of the factors that impact positively behavioral intention to use cryptocurrency [27]. Nevertheless, previous studies also found learning the conscious behavior of investors mainly comes from past trading experiences. Meanwhile, investors have unconsciously learned trading behavior through imitating others [28]. Therefore, in another study of investor attitudes and behavior towards cryptocurrency, concluded that individuals' tendency to use cryptocurrency if their friends use it has also been supported in this research [29].

In conclusion, this study has withdrawn an overview of investor behavior toward cryptocurrency speculation motifs. The study oversaw several possibilities underlying the motifs of investment, measuring risk awareness of the relatively new instrument mode of investment, as well as finding the impact of social media influence in decision-making. The result of this quantitative research has the purpose of improving financial security and stability by identifying the potential of herd behavior in investment and economic bubbles due to the sudden rise in one mode of investment without a common ground of understanding. Lastly, through this research, future action can be taken by authorized bodies in educating and bringing socialization regarding financial literacy before investing to avoid undesirable returns.

CONTRIBUTIONS AND SUGGESTIONS

The findings of this study have explored the financial literacy and risk awareness of cryptocurrency investors in Indonesia. It has also debunked the impact of social media and motifs underlying the investment decision. However, further improvement in future research can be done by enhancing qualitative elements in the research to comprehend and accommodate different contextual situations of investment. Furthermore, an additional theoretical framework to be tested using a similar paradigm on the cryptocurrency behavior investment would generate an enrichment of results. Lastly, the study was conducted during the pandemic situation with a high influence on the nature of investment in cyber form. Further observation of the post-pandemic situation would bring benefit to assessing the stability of the cryptocurrency investment.

The potential problem of this study comes from the measurement of literacy which could be varied among investors and this research assessed based on their opinion which could potentially be understated or overstated. Furthermore, the comprehensive questionnaire contains considerably many questions to be answered by a specific population of those who have invested in cryptocurrency. Therefore, the process of gathering the data cannot be done by any random person yet the result is insightful.

The strength of this research lies within the problem identification which is drawn from the recent phenomenon in the real-live event and a comprehensive questionnaire covering possibilities occurs in bridging the hypothesis to the findings. Analysis tools are also measured in the process of scoring the data which brings the reliability of the data gathered.

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