Determinants of Investment Decision in Cryptocurrency: Evidence from Indonesian Investors

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Abstract This study aimed to determine the effect of behavior factors and social demography on the investment decision in cryptocurrency in the Greater Jakarta area. The method used in this study is partial least square (PLS) using the SmartPLS software application. The behavior factor variables used in this study are overconfidence, herd behavior, subjective norm, and awareness variables. This study also used social demography moderating variables in age, gender, occupation, education, and investment experience on 400 respondents in the Greater Jakarta area. The test results show that only overconfidence and awareness variables have a significant positive effect on decisions to invest in cryptocurrency and subjective norms variables that have no significant positive effect but can be moderated by social demographic factors such as age and investment experience. In addition, other variables have no significant positive effect. They cannot be moderated by social demographic factors such as age, gender, occupation, and investment experience on the decisions of cryptocurrency investors in Greater Jakarta area. Our study contributes to developing knowledge, insight, skills and analyzing researchers, especially regarding the influence of behavioral factors and social demography on investment decisions in cryptocurrency.

Keywords Cryptocurrency, Behavior Factors, Social Demography

1. Introduction

Generally, investment is an activity carried out by individuals or corporate entities that carry out investment activities either directly or indirectly with the hope that the owner of the capital will benefit from the results of these investment activities. In addition, investment can be interpreted as a commitment to many funds or other resources carried out to obtain some benefits in the future. Investors or investors use these investments as a tool to create a better standard of living in the future, including individual investors in Indonesia [1].

Financial investment has proliferated in the current era of globalization. Financial investments are usually made in stocks or bonds, along with the rapid development of globalization which gave birth to other financial derivative instruments such as options, futures, credit default swaps, debt obligations, warrants, etc. With this development, investors, and potential investors worldwide, including Indonesia, are created to generate higher investment returns even though it will result in a higher commensurate risk.

The latest developments in investment are based on cryptocurrencies based on blockchain systems, which are not only cryptographic virtual currencies used to buy and sell goods or services on the internet but are also popular assets commonly used for hedging and speculation. In addition, cryptocurrency is used as a technology that is often used as a digital currency. Digital money is different from conventional money in general. This type of money

does not have a physical but is just a decentralized block of data on a network system that is almost impossible to be hacked or changed unilaterally.

The cryptocurrency was first introduced in 2008 through a white paper published under the pseudonym "Satoshi Nakamoto", then officially launched in 2009 [2]. Among the existing cryptocurrencies, Bitcoin is the most popular and active in trading and exchanges. Bitcoin is the perfect form of money for the internet because of its fast, secure, seamless innovation from decentralized core technology, trust, and transparency. One of the characteristics of cryptocurrencies that attracts the interest of many investors and potential investors is that the price is constantly increasing over time, experiencing extraordinary price increases, as was the case with bitcoins worth less than 0.01 USD in 2010 to above 10,000 USD each. In 2019, and from a single bitcoin to over 1000 altcoins and crypto tokens, cryptocurrencies and blockchains have created more investment myths than anyone could have imagined [3].

However, Bitcoin also has a weakness, namely the absence of control from any institution or government. Bitcoin uses a blockchain database that cannot be controlled by any party but is open to the public that it is impossible to fake transactions on the blockchain. Bitcoin uses a peer-to-peer network technology where each user can receive transactions without intermediary parties at any time and with an anonymous identity. The existence of anti-double-spending technology means others cannot claim Bitcoin if it is [2].

In addition to Bitcoin, there are alternative cryptocurrencies that have a similar design and are emerging. An alternative to cryptocurrencies is called Altcoin, which is an alternative to Bitcoin. Altcoins use a peer-to-peer system similar to Bitcoin that functions to validate a transaction or what is known as mining which will then be added to the blockchain. While the main difference with Bitcoin is the technology used, namely using an algorithm (Proof of Work or PoW). Altcoins are Ethereum, Litecoin, Ripple, Dash, Monero, Tether, EOS, and Stellar [4].

One of the most mined 'Altcoins' and is in second place after Bitcoin is Ethereum (ETH), where ETH peaked at a price on May 12, 2012, for \$4,356.99 and has a supply of 117.48 Million ETH. Ethereum is known as software that can run on computer networks where this software will ensure the data and small programs in it, called smart contracts, then apply and process them to all computer networks automatically without a central coordinator. Ethereum has the same functions and features as Bitcoin and other cryptocurrencies, which can be used as digital money. Ethereum uses a decentralized system which means anyone or any company cannot control it, and the supply of Ethereum is unlimited [4].

On the other hand, there is an increase in cryptocurrencies as well as the role of the mass media as it was recently discovered in February 2021 that there was a

tweet from the Twitter account of the richest person in the world, namely Elon Musk, who made a statement regarding digital money Dogecoin. Then Tesla Inc. invested 1.5 Billion USD in Bitcoin. Tesla Inc. also hinted at its intention to start accepting cryptocurrencies as a form of payment.

The concept of economic fragmentation is advocated by Bitcoin. Social-demographic characteristics and other attributes of cryptocurrencies can influence individuals and corporate retirees are not able to participate and invest in the market [3]. It shows the difference between the determinants of these two choices among the Australian and Chinese cryptocurrencies. Significant factors from these two choices included age, gender, education, occupation, and investment experience, and all were in harmony with the behavioral literature. It could be one of the possible explanations of our findings, given that the cryptocurrency market has experienced significant fluctuations with the future, considering the recent trends in pricing and regulation. In addition to the increased income, it allows people who would typically never invest outside of their habits to invest in something that gives them the opportunity.

Demographic characteristics such as age, gender, and education level can also play a positive role in investment decisions made by investors in the Egyptian capital market. Behavioral factors such as investor sentiment, over/under reaction, overconfidence, and herd behavior can also influence investment decision making. However, when investors gain experience in the investment field, they tend to ignore the emotional effects of sentiment, over/under reaction, overconfidence, and herd behavior [5].

The technical nature of cryptocurrencies in increasing the level of trust, technology awareness, and satisfaction effects is considered essential and has a positive effect on the attitudes of investment players in cryptocurrency [6]. In addition, the need for technology awareness can also reflect high support for the fact that it is difficult to market this type of currency among the older generation who do not use information from new technology. This study uses behavior factors and social demography because cryptocurrency investors in Greater Jakarta are still influenced by emotional factors, as well as outside information in making investment decisions, such as information on price movements, opinions of people who are considered more expert, or internet sources so that they are based on the background, the problems described and some of the results of previous studies, then the problems that must study in this study are:

1. Analyzing the influence of behavioral factors that can affect the decision-making to invest in cryptocurrency.
2. Analyzing the effect of investor social demography on the relationship between behavioral factors in making decisions to invest in cryptocurrency. Due to the background of the problem above, the researcher

wants to know whether the above factors can affect investment in cryptocurrency.

2. Literature Review

Behavior finance is a study that studies how psychological phenomena affect financial behavior—the behavior of the stock players, which states the behavior of practitioners [7]. Behavioral finance tries to explain and improve understanding of the patterns of investor reasoning, including the emotional aspect and the degree to which these aspects influence the decision-making process. More specifically, behavioral finance tries to provide answers to what, why, and how of finance and investment from a human point of view.

Overconfidence is a feeling of excessive self-confidence. A more confident attitude can adversely impact investment decision-making, especially in stock investment, because such an action can be called irrational so that investors overestimate without seeing the risks that will be obtained. Overconfidence is related to prejudice or feelings about how well a person understands their abilities and the limits of their knowledge. Overconfidence has a destructive impact on the investor's own portfolio [1].

In herd behavior or herding behavior, investors take actions to imitate the work of others, which means that if one investor chooses securities "A", other investors will also invest in these securities without making their own strategy [8]. Economic theory says that investors are rational and evaluate all information before deciding, but that is not possible in real life because there must be a large amount of information. Investors cannot evaluate all the information.

Subjective norms are a function based on beliefs called normative beliefs, namely beliefs about the agreement and/or disagreement from referents or people and groups that influence individuals (significant others) such as parents, spouses, close friends, colleagues. Work or otherwise to a behavior. Subjective norm is an individual's perception of social pressure to perform or not to perform a behavior. Subjective norms are determined by normative beliefs and the desire to follow (motivation to comply).

Awareness can be defined as a financial awareness as "the ability to make sound judgments and to make effective decisions regarding the use and management of money" [9]. Awareness exists to share information or ideas through the internet, media, social interactions, recommendations from friends, relatives, or intermediaries. Media is a crucial element factor influencing investment decision making. It plays an essential role in sharing information about forecasts and market movements.

Social demographic is a general description of individuals that shows the condition of individuals or groups in a study. Social demographics are considered to have a role in individual behavior when facing a decision

that has a financial impact and differences in demographic factors that can lead to differences in a person's behavior [10].

Cryptocurrency is a peer-to-peer digital currency that is exchanged using crypto-graphic principles that are systematically arranged to form various passwords or codes to print virtual currency and the existence of public and private keys, which are usually used to move cryptocurrency from one person to another.

Previous research serves to explain the discussion of research that previous researchers have carried out. The following are some previous studies used as a reference in this study, namely Xie [3], stating the results show the differences in the determinants of these two choices between Australian and Chinese cryptocurrencies. Significant factors in these two choices included age, gender, education, occupation, and all behavioral literature. Moreover, apart from differences in how they rank ICO attributes, there are other differences between Chinese and Australian investors who rank deterrence factors and investment strategies. The research results show that herding behavior has no significant effect on investment decisions, while experienced regret has a positive and significant effect on investment decisions. Bitcoin investors tend to be well informed and analytical to invest in Bitcoin. Investors tend to be rational because they influence by other investors and do not follow the noise in the market. In contrast, the higher the level of a person has experienced regret, then in making investment decisions, they will tend to be bolder in choosing the type of investment that has a higher risk because someone who already has experienced regret has had sufficient experience in making investment decisions [11].

The structural model analysis provides evidence that compatibility, awareness, and facility conditions can influence Malaysian Muslim decisions to invest in Bitcoin. On the other hand, perceived ease of use, profitability, subjective norms, and trust do not significantly impact the intentions of Malaysian Muslims to invest in the Bitcoin market [2]. In addition, other research states that demographic characteristics such as age, gender, and education level can also play a positive role in investment decisions made by investors in the Egyptian capital market. Behavioral factors such as investor sentiment, over/under reaction, overconfidence, and herd behavior can also influence investment decision-making. However, when investors gain experience in the investment field, they tend to ignore the emotional effects of sentiment, over/under reaction, overconfidence, and herd behavior [5].

Other studies on herding, media factors, advocate recommendation, and social interaction have a significant and positive effect on investor sentiment. Among all these factors, social interaction has the lowest effect on investor sentiment. The study also revealed that investor sentiment positively impacts investment decision-making [9].

3. Data and Methodology

3.1. Data

The sample in this study is the investors who have a cryptocurrency portfolio or do not have cryptocurrency in the Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang, and Bekasi). According to data from the population census of the Badan Pusat Statistik (BPS) for the December 2020 period for the Greater Jakarta area, 19,448,198 people consisted of 6,701,869 people for the Jakarta area, 3,972,979 people for the Bogor area, 1,289,803 people for the Depok area, 4,078,755 people for the Tangerang area, and 3,514,792 people for the Bekasi area. In this study, the type of data used uses primary data, namely data obtained from the first source or directly. To obtain this data, the researcher used an online questionnaire in a structured manner that contains several questions based on indicators from previous research to investors and potential individual investors through Microsoft Forms and the data measuring instrument used in this study—using a Likert scale.

In addition, this research also uses the method of literature study and documentation. Literature studies are carried out by processing literature, articles, journals, and other written media. The number of samples taken for this study was calculated using the slovin formula. The number of samples in this study was 400 respondents in the Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang, and Bekasi).

This research uses various variables such as dependent variable, independent variable, and moderating variable. Independent variables or also known as independent variables are the variables that can effect changes in the dependent variable. The independent variables in this study consist of overconfidence or overconfidence, which will refer to a biased way of looking at a situation; this can be observed when people's subjective belief in their abilities is greater than their actual performance. For the second variable, the Herd behavior variable or herding behavior, investors take actions to imitate the work of others, which means that if one investor chooses securities "A," other investors will also invest in these securities without making their strategy [8]. The third variable, the Subjective norms variable, is an individual's perception of social pressure to perform or not to perform a behavior [12]. The last variable is awareness which can define as financial awareness as "the ability to make appropriate judgments and to make effective decisions regarding the use and management of money" [9], or ideas via the internet, media, social interactions, recommendations from friends, relatives, or intermediaries.

The moderating variable in this study is social demography, which is interpreted as a unit of measure in calculating the length of existence of a particular object or creature. Indicators of age or age are usually measured using the respondent's current age. Samples are divided into five groups of productive age, namely under 20 years,

21-30 years, 31-40 years, 41-50 years, and above 50 years. Gender is interpreted as a condition in which an individual to be male or female. Indicators of gender or gender are usually measured using male and female indicators. Occupation is a profession that a person carries out activities that provide results in the form of experience or material that can support his life. Indicators of occupation are usually measured using indicators of the position where the respondent works. Education can influence a person to make decisions, especially on investment decisions, because a person's higher education level causes the determination of optimal investment decisions to generate investment returns to improve investment performance for investors. Indicators of education or education level are measured by using the last education of the respondent. Moreover, the next is a moderating variable in the form of Investment Experience, or experience has a special role in making investment decisions. The longer a person's investment experience, the better in choosing alternative options to evaluate several alternatives. Indicators of investment experience or investment experience are measured using indicators of how long the respondent has or has not carried out investing activities.

3.2. Methodology

Analysis of the data used in this study is a statistical test tool with variance-based structural equation test or better known as partial least square (PLS) using SmartPLS 3.3.0 software. This data analysis uses PLS, which consists of two models: the measurement model or the outer model and the structural or inner model.

The purpose of using Partial Least Square (PLS) is to make predictions that predict the relationship between constructs [13]. In addition, to help researchers get the value of the latent variable that aims to make predictions in their research. A partial least square is also distributed free. It does not use assumptions on certain data. It can be nominal, category, ordinal, interval, and ratio [13], using bootstrapping method or random doubling. The problem consists of two models: the measurement model or the outer model and the structural or inner model.

Testing the measurement model or measurement model in PLS shows a relationship between latent variable constructs and their indicators. Testing the measurement model in this study will evaluate the reflective measurement models based on convergence (convergent validity) and discriminant validity (discriminant validity). Convergent validity can be seen from the loading factor value for each construct indicator and Average Variance Extracted (AVE) for each variable.

The analysis of the outer model can be seen from several indicators, namely the measurement of convergent validity on the measurement model (outer model), which can be seen from the reliability of the loading factor, which is considered sufficient if it has a minimum value of 0.70. Measurement of discriminant validity in the

measurement model (outer model) can be seen from the cross-loading between indicators and their constructs. The model is said to have good discriminant validity if the root of the average variance extracted for each construct is greater than the correlation between constructs and other constructs. To evaluate composite reliability, there are two measuring tools, namely internal consistency and Cronbach's alpha. In this measurement, if the value achieved is >0.70 , it can be said that the construct has high reliability. The reliability test carried out strengthens the results of composite reliability. A variable can be declared reliable if it has Cronbach's alpha greater than >0.70 [14].

The inner model analysis looks at the structural model and substantive theory, describing the relationship between latent constructs/variables based on substantive theory. The structural model test begins with looking at the R-Square value of each endogenous latent variable to strengthen the predictions of the structural model. Changes in the R-Square value are said to be strong (0.75), moderate (0.50), and weak (0.25) [14].

In testing the hypothesis, the value of t-statistics and probability values. To test the hypothesis using statistical values, the alpha 5% of the t-statistic value used is 1.96. So, the criteria for acceptance/rejection of the hypothesis are that H_a is accepted and H_a is not accepted when the t-statistic >1.96 . To accept/reject the acceptance of the hypothesis by using probability, H_a is accepted if p-value <0.05 .

4. Results

Testing the measurement model in PLS shows a relationship between the latent variable constructs and the indicators. Testing the measurement model in this study will evaluate the reflective measurement models, which are based on convergence (convergent validity) and discriminant validity (discriminant validity). Convergent validity can be seen from the loading factor value for each construct indicator and the Average Variance Extracted (AVE) for each variable.

Figure 1. Loading Factor of SmartPLS model after modification

Figure 2. Charts Average Variance Extracted (AVE)

Loading factor on convergent validity, there are three types of rules in research if the loading factor value has >0.70 then for confirmatory research, >0.60 then for Exploratory research, and >0.50 then for explanatory research [14]. This research is included in confirmatory research. Figure 1 above is the SmartPLS model, which has been modified after being eliminated for the AN2, ID4, and ID5 indicators, which have a loading factor value of <0.70 , resulting in results for all loading factors >0.70 . The following shows the results of the convergent validity test for the loading factor in table 1 and average variance extracted (AVE) values in figure 2.

All indicators in the variables used in this study have an AVE value >0.50 , and this shows that the indicators in each variable in this study have met the criteria of the convergent validity test [14].

The measurement of discriminant validity in the measurement model (outer model) can be seen from the cross-loading between indicators and their constructs. The model is said to have good discriminant validity if the square root of the average variance extracted (AVE) for each construct is greater than the correlation between constructs and other constructs [14].

Table 1. Cross Loading Test Results

Indicator	X1	X2	X3	X4	Y
OC1	0.755	0.329	0.199	0.438	0.447
OC2	0.831	0.278	0.220	0.481	0.499
OC3	0.757	0.333	0.203	0.421	0.453
OC4	0.780	0.334	0.287	0.459	0.407
OC5	0.735	0.337	0.327	0.469	0.396
HB1	0.300	0.767	0.252	0.339	0.232
HB2	0.293	0.854	0.313	0.318	0.244
HB3	0.345	0.833	0.276	0.321	0.248
HB4	0.402	0.799	0.365	0.374	0.267
SN1	0.314	0.357	0.793	0.338	0.221
SN2	0.220	0.278	0.817	0.230	0.237
SN3	0.239	0.267	0.827	0.333	0.190
SN4	0.251	0.308	0.818	0.324	0.168
AN1	0.484	0.253	0.193	0.853	0.617
AN3	0.458	0.406	0.274	0.778	0.456
AN4	0.428	0.346	0.501	0.725	0.375
AN5	0.450	0.328	0.267	0.734	0.417
ID1	0.448	0.236	0.173	0.574	0.864
ID2	0.533	0.212	0.255	0.457	0.831
ID3	0.442	0.313	0.207	0.499	0.782

Table 2. Composite Reliability Test Results

Variabel	Composite Reliability
Overconfidence (X1)	0.881
Herd Behavior (X2)	0.887
Subjective Norms (X3)	0.887
Awareness (X4)	0.856
Cryptoassets Investment Decision (Y)	0.866
Age	1.000
Gender	1.000
Occupation	1.000
Education	1.000
Investment Experience	1.000

All indicators in table 2 and figure 3 have a composite reliability value that is >0.70 ; it can be concluded that all variables in this study have met the criteria for testing reliability. These variables have high reliability [14].

Figure 3. Composite Reliability Charts

Table 3. Cronbach's Alpha Test Results

Variabel	Cronbach's Alpha
Overconfidence (X1)	0.831
Herd Behavior (X2)	0.830
Subjective Norms (X3)	0.832
Awareness (X4)	0.779
Cryptoassets Investment Decision (Y)	0.767
Age	1.000
Gender	1.000
Occupation	1.000
Education	1.000
Investment Experience	1.000

Figure 4. Cronbach's Alpha Charts

Table 4. Coefficient of Determination test results (R-Square)

Dependent Variabel	R Square
Cryptoassets Investment Decision (Y)	0.467

In the reliability test, in the Cronbach's negligent test, a variable can be declared reliable if it has Cronbach's alpha that is >0.70 [14]. Based on the table 3 and figure 4 above, all indicators have a Cronbach's alpha value that is >0.70 , it can be concluded that all variables in this study have met the criteria for testing reliability, and these variables have high reliability.

Analysis of the Coefficient of Determination (R^2) or R-Square is used to measure how far the model's ability to explain the variation of the dependent variable.

Based on table 4, the results of testing the coefficient of determination or R-Square. The R-Square for the dependent variable, namely Cryptocurrency Investment Decision (Y), is 0.467 or 46.7%. The relationship between latent constructs/variables can be moderate, which means that the Cryptocurrency Investment Decision (Y) variables can explain the Cryptocurrency Investment Decision variable by 46.7%. In comparison, the remaining 53.3% is explained by other variables outside of this study.

Figure 5. Coefficient of Determination test results (R-Square)

Based on figure 5, the results show that overconfidence has a significant positive effect on the investment decision in cryptocurrency, which means that if there is a change in the value of overconfidence, it has a significant influence on the decision to invest in cryptocurrency in the Greater Jakarta area or other words. If there is an increase in overconfidence, there will also be an increase in the level of overconfidence. Cryptocurrency investment decisions have a significant positive effect. The results of this study are in line with research conducted by [1], which shows that overconfidence has a positive effect on investment decisions where the cause of overconfidence in investors is following the opinion that overestimates risk. As a result, investors with high overconfidence will be bolder in making decisions, while those with low overconfidence tend to be cautious about making decisions. However, the

results of this study are not in line with research conducted by [15], which states that overconfidence does not affect investment decisions. This cause has no effect because respondents think that their knowledge and abilities are not needed to make investment decisions. So, it can be concluded that the positive influence of overconfidence on cryptocurrency investment decisions on investors in the Greater Jakarta area can be caused by investors owning or keeping the best digital currencies in their portfolios. Investors also feel they have control over the flow of returns on their investment decisions. Investors have the expertise and skills needed to be able to invest in the crypto market.

In addition to the test results, the results obtained that overconfidence has a significant positive effect on the decision to invest in cryptocurrency but is not moderated

positively and negatively by social demography factors of age, gender, occupation, education, and investment experience. It means that the results of this study are not in line with research conducted by [3], which states that age, gender, and occupation factors affect investment decisions. It happens that both men and women do not find it easier to be confident and cautious in uncertainty caused by high overconfidence. Then, the five age groups did not affect the level of overconfidence of the investor and at the productive age who are still in active working age and educated and have personal income at the age of 21-30 years. In the job aspect, for students, private employees, civil servants, State/BUMN/BUMD, entrepreneurs, freelancers, homemakers, job seekers, doctors, and even a trader, feel that they are not interested in deciding to invest in cryptocurrency. So, it can be concluded that the effect of overconfidence moderated by social demographic factors in the form of age, gender, occupation, education, and investment experience on investors in the Greater Jakarta area cannot be caused by factors where investors own or keep the best digital currencies in their portfolios, investors also feel they have control over the return flow of their investment decisions, and investors have the expertise and skills needed to invest in the crypto market.

Based on the test results, the results show that herd behavior does not have a significant positive effect on the decision to invest in cryptocurrency. It means that investors do not take any action to imitate others; if an investor has a portfolio "A", then other investors will also invest in the portfolio. Without the existence of a way to create a different strategy in carrying out investment activities. The results of this study are in line with research conducted by [11], which states that herd behavior has no significant effect on investment decisions. Investors tend to be rational because they are not influenced by other investors and do not follow the noise that occurs in the market. The herd behavior has no significant effect on investment decisions [16]. However, the results of this study are not in line with research conducted by [10], which states that herd behavior influences positive investment decisions, so it can be seen that the higher the herding level of an investor, the higher the investment decision. So, it can be concluded that the factor which does not affect herd behavior can be caused because the investors do not follow the decisions of other investors in choosing, buying, and selling their coins which have an impact on investors' decisions to make investment decision in cryptocurrency, and are not easily influenced quickly, to changes caused by other investors' decisions to invest.

In addition to the test results, the results obtained that herd behavior does not have a significant positive effect on the decision to invest in cryptocurrency and is not moderated both positively and negatively on social demography factors of age, gender, occupation, education,

and investment experience, which means that the age factor, gender, occupation, education, and investment experience cannot enable the actions of investors to imitate the work of others which means that if one investor has a portfolio "A", then other investors will also invest in that portfolio without making a good strategy from the environment. Education, occupation, and length of experience of investors in investing. This is in line with research conducted by [5], herd behavior has a significant effect on investment decisions. Demographic factors such as age, gender, and education significantly affect investment decisions. So, it can be concluded that apart from the herd behavior factor, it turns out that investors do not follow the decisions of other investors in choosing the type, buying, and selling their coins which have an impact on investors' decisions to make decisions to invest in cryptocurrency, and are not easily influenced by changes caused by other investors' decisions to invest cannot be moderated by social demographic factors such as age, gender, occupation, education, and investment experience.

Based on the test results, the results show that subjective norms do not have a significant positive effect on decisions to invest in cryptocurrency, which means that an action taken by investors is not carried out because of social pressure. There is agreement or disagreement to decide whether to invest in cryptocurrencies. Subjective norms are a function based on beliefs called normative beliefs, namely beliefs about the agreement and/or disagreement from referents or people and groups that influence individuals (significant others) such as parents, spouses, close friends, colleagues [12]. Work or otherwise to a behavior. So, in this study, subjective norms are not formed due to individual or group perceptions of existing social pressures to realize or not a behavior. This study is in line with the research conducted by [2] that subjective norms were found to have no significant influence on the intention of Malaysian Muslims to invest in the Bitcoin market. In addition, it can be concluded that the subjective norm has no effect because there is no pressure from the closest people, family, friends, coworkers, and the surrounding environment not to be able to influence investors to think, invest, or decide to invest in cryptocurrency.

In addition to the test results, the results obtained that subjective norms do not have a significant positive effect on decisions to invest in cryptocurrency. However, it turns out that social demographic factors of age and investment experience can moderate subjective norms to influence investors' cryptocurrency investment decisions, which means that it allows investors to have pressure to do or not to do something, and agree or disagree with investing in cryptocurrency. It is in line with research conducted by [3], which states that the age factor influences investment decisions which in this study are productive ages who are still in active working age and are educated and have personal income at the age of 21-30 years old—influenced

by the subjective norm factor when investors make an investment decision. Nevertheless, apart from that, the test results show that subjective norms do not have a significant positive effect on the decision to invest in cryptocurrencies which are not moderated by social demography factors such as gender, occupation, and education in investment decision making.

Based on the test results, the results obtained that awareness has a significant positive effect on decisions to invest in cryptocurrency. It means that investors have the awareness of having the ability to make an appropriate assessment of sources of information or ideas through the internet, media, social interaction, recommendations from friends, relatives, or intermediaries. Media is a crucial element factor influencing investment decision making. It plays an essential role in sharing information about forecasts and market movements. It is in line with research conducted by [2], which finds that awareness and knowledge of Bitcoin has a significant influence in using it. The existence of this indicates that awareness is defined in terms of respondents' access to general information about Bitcoin and its benefits and possible risks, as well as techniques commonly used in managing Bitcoin investments. So, it can be concluded that the awareness is used by investors by using social media to be able to see the effect on price movements, as well as an appropriate communication channel to see the role of media needed in the market, and mainly used as a medium to read information. Regarding using cryptocurrency, as a discussion forum where there are friends and people around about investing in cryptocurrency. However, the test results show that awareness has a significant positive effect on investment decisions in cryptocurrency but is not moderated by social demographic factors such as age, gender, occupation, education, and investment experience in the Greater Jakarta area.

5. Conclusions

The results of this study are that overconfidence has a significant positive effect on the decision to invest in cryptocurrency in the Greater Jakarta area. It means that if there is a change in the value of overconfidence, it has a significant influence on the decision to invest in cryptocurrency in the Greater Jakarta area or, in other words, if there is an increase in overconfidence, there will also be an increase. The level of cryptocurrency investment decisions that have a significant positive effect. Meanwhile, social demography moderating variables in age, gender, occupation, education, and investment experience did not moderate the overconfidence variable on investors' investment decisions.

Herd behavior positively does not significantly affect the decision to invest in cryptocurrency in the Greater Jakarta area, which means that investors do not take any

action to imitate others. If an investor has a portfolio "A". Then, other investors will also invest in that portfolio without creating its strategy in conducting investment activities. Meanwhile, social demography moderating variables in age, gender, occupation, education, and investment experience did not moderate herd behavior variables on investors' investment decisions.

Subjective norm positively does not significantly affect the decision to invest in cryptocurrency in the Greater Jakarta area, which means that an action taken by investors is not carried out because of social pressure. There is agreement or disagreement to decide to invest in cryptocurrency. Meanwhile, social demography moderating variables such as age and investment experience can moderate subjective norm variables on investors' investment decisions, but social demography factors such as gender, occupation, and education do not moderate investors' subjective norm variables.

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