



The Influence of Behavioral Bias, Cognitive Bias, and Emotional Bias on Investment Decision for College Students with Financial Literacy as the Moderating Variable

Vido Novianggie¹, Nadia Asandimitra²

^{1,2}Department of Management, Faculty of Economics, Universitas Negeri Surabaya, Indonesia,

¹Email: vido.novianggie@gmail.com, ²E-mail: nadiaharyono@unesa.ac.id

Abstract

The investment gives an important moment for the economy of individuals. In making an investment decision, someone must act rationally and not rarely also be irrational. The purpose of this research is to know the influence of behavioral bias, cognitive bias, and emotional bias on investment decision, with financial literacy as a moderating variable. The sample is used 212 respondent from a college student in Investment Gallery Surabaya, using a detailed questionnaire, limited interview, and multiple regression analysis. The result obtains suggest that herding bias, risk perception, overconfidence, representativeness, and financial literacy have an effect significantly to an investment decision. While disposition effect and experience regret not to affect significantly to the investment decision. Financial literacy is not a moderating variable, but an independent variable. Financial literacy can't moderate herding bias and overconfidence to the investment decision. The result about research shows that college student in Surabaya in making investment decision base on advice from broker or friends and experience in other investment financial instrument in the past, and use information from magazine or news online dor investment decision. This study is based on decision theory, herding theory, behavioral finance theory, and prospect theory

Key words

Behavioral bias, cognitive bias, emotional bias, financial literacy, investment decision

Received: 01 May 2019 © The Authors 2019

Revised: 09 June 2019 Published by Human Resource Management Academic Research Society (www.hrmars.com)

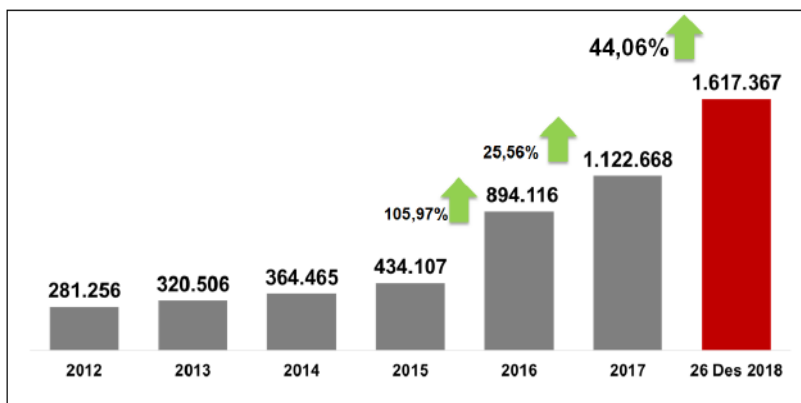
Accepted: 16 June 2019 This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full

Published Online: 19 Jul 2019 terms of this license may be seen at: <http://creativecommons.org/licenses/by/4.0/legalcode>

1. Introduction

The need for investment has become an important thing to be considered since investment is a part of financial planning. Everybody needs investment basically because it can protect and expand their wealth's basis. Also, by doing investment, it can establish a social guarantee in the future. The purpose of doing investment is different for each person. There are 39.70% people invest to buy a house, vehicle, and education fee. About 35.30% of people use their investment as the emergency fund and the other 25% use it as a pension fund (Kontan.co.id 2018). Research from *Schroders* described that the most wanted type of investment in Indonesia is in a property (21%); stocks, obligation, and commodity (21%) creating their own business (19%), and also in banking (12%) (Andi and Kartini 2017), as SID charts in Indonesia until December 2018.

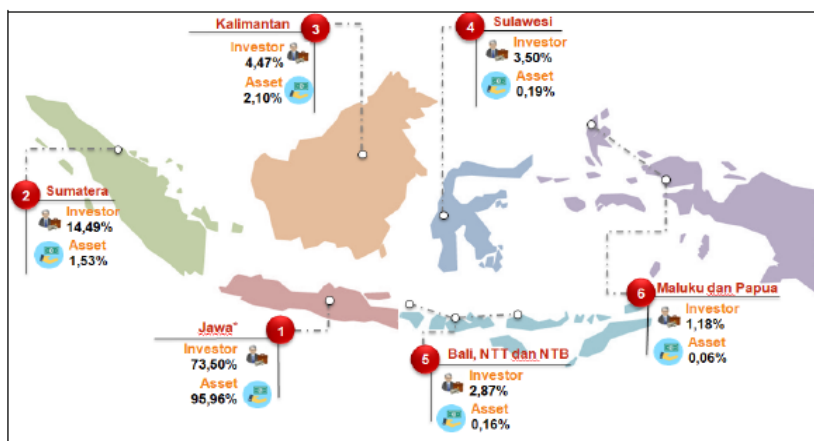
Figure 1, it can be concluded the amount of single investor in Indonesia has experienced an enhancement comparing to the last year with the amount of 44.06% into 1.617.367 SID. It shows that the investor's activity in the Indonesian capital market experience a great changing every year.



Source: KSEI 2018

Figure 1. Single Investor Identify until December 2018

This enhancement cannot be separated from the Financial Services Authority (OJK) and Indonesia Stock Exchange (BEI) role in increasing the literation in Indonesia with the amount 29.66% in 2013-2016 and developing financial inclusion with the number 8.08% in 2016. As data from Central Securities Indonesia Custodian (KSEI) in 2018 regarding the distribution of SID in Indonesia can be seen in the figure 2:



Source: KSEI 2018

Figure 2. Spread of Investor in Indonesia until December 2018

Figure 2, it can be concluded the spread of the investor in Indonesia is dominated in Java Island with the percentage of 73.50%. It also proves that the number of investors in Indonesia is dominating in Java region and 34.08% investors in the capital market are 21-30 years old. The data from Financial Services Authority (OJK) showed that the spread of investor in Java Island is dominated on three provinces: the third position is East Java, followed by West Java in the second, and Special Capital Region of Jakarta in the first. It also stated that the investor from East Java is 144.766 people until March 2018 (Jawapos, 2018)

Surabaya is the city that has the most Single Investor Identify (SID) in East Java with the number 32.362 SID (59%) followed by Malang City 9.825 SID (15%), Sidoarjo 7.862 SID (12%), Kediri City 4.315 SID (8%), and Gresik District 2.987 SID (6%). There is cooperation between Indonesia Stock Exchange (BEI), Central Securities Indonesia Custodian (KSEI) and Securities Company targeting adolescent who is still studying in school and in college by giving capital market education. The purpose is to increase the financial literation for the young generation so they will be not easy to trust *ignorant* investment (deception) (Jawapos, 2018). The result of the program in 2017 showed that Indonesia Stock Exchange (BEI) owned some investment galleries and 12 of them are established in some campuses in Surabaya, for instance, Phintraco Securities and Sucor Securities. Phintraco Securities manage some investment galleries. They are Investment Gallery in Bhayangkara University, Investment Gallery in Dr. Soetomo University, and Investment Gallery in Politeknik Pelayaran Surabaya. While Sucor Securities was a company with the name

of PT Sucorinvest Central Ghani that manage two investment galleries of higher education in Surabaya such as Investment Gallery in State Surabaya University and Investment Gallery in Widya Mandala University.

Investor decision is one of the most important decisions in stock exchanges investment (Tanvir *et al.*, 2016). When a person has decided to invest, a rational investor has a tendency to choose a low-risk investment with a high level of return. But when an investor has to deal with investment choice, they tend to do an irrational behavior which affects their decision of investment. Cognitive and emotional factors which are referred influence the perception of an investor for investment decision (Alwahaibi, 2019). There are some types of investor; one of those is an investor who always follows other's investor opinion in making a decision. This kind of behavior is called *herding bias*. The study of Ghalandari and Ghahremanpour (2013) mentioned that *herding bias* has a positive effect on the investment decision. But, the study of Setiawan (2017) found that *herding bias* has no effect on the investment decision.

Based on research Alwahaibi (2019), for many years that investors buy stock in high then sell low. This behavioral is *disposition effect*. *The disposition effect* is a tendency of an investor to sell assets that have increased in value, while keeping assets that have dropped in value, with the hope that the value will increase in the future (Toma, 2015). The research found that the *disposition effect* affected the investment decision. Besides, the research of (Hayat and Anwar 2016), stated that disposition effect has no positive effect on the investment decision.

When making decision, intentionally or unintentionally, emotion can influence investor rationally (Tanvir *et al.*, 2016). Investors are very careful by carrying out different analyzes and considering risks. *Risk perception* is an investor's perspective in considering the value of the risk that will be received in investment (Pradikasari and Isbanah 2018). Based on the research, the bias of *risk perception* has no effect in the investment decision, while (Alquraan *et al.*, 2016), found that *risk perception* has a positive effect in an investment decision.

Overconfidence is a bias of a person's confidence that is excessive in his or her skill or knowledge they have in investment (Budiarto and Susanti 2017). The research of Pradikasari and Isbanah (2018) found that there is an effect of *overconfidence* in the investment decision. In the other hand, the research of Wulandari and Iramani (2014), showed that there is a negative effect of *overconfidence* behavior in the investment decision.

Representativeness is a tendency of an investor in realizing their decision based on their experience that happened in the past. Irjayanti *et al.* (2017) explored that there is no significant effect of *representativeness* in the investment decision. Besides, the study conducted by Manuel and Mathew (2017) stated that there is a positive effect of *representativeness* with the investment decision.

The research conducted by Setiawan (2017) said that an investor tends to use emotional factor in taking the investment decision, which is called *experience regret*. The statement is correlated with the study of Putra *et al.* (2016) mentioned that there is an effect between *experience regret* and investment decision. However, the statement is in contrast with the research of Fachrudin and Fachrudin (2016) that showed there is no correlation between the experience of a person with the investment decision.

Those are the principles that affect the decision investment of an investor. Besides, the investor tries to act rationally with the regard of literation they have. *Financial Literacy* as the fundamental of finance is a strength that can be used as the skill and ability of a person in managing finance resources that they have effectively. A study conducted by Khalid *et al.* (2016) stated that *financial literacy* can moderate the relation between herding bias and investment decision. The type of moderating is reinforcing herding bias and investment decision. An investor who has the good literacy quality will use the information of the company as the reference in the investment decision in contrast with those who have poor literacy quality that tends to follow the decision of a group in the investment decision.

The research conducted by Hayat and Anwar (2016) in the capital market of Pakistan found that investor with a high level of *financial literacy* can decrease the *overconfidence* because they have better skill and ability in financial and investment they conducted. The investor tends to count the value of interest, coupon level, fluctuating inflation, and other economic conditions that can influence their level of confidence in the investment conducted. It also can be said that *financial literacy* can moderate the relation of overconfidence with the investment decision with the result of decreasing the level of *overconfidence* in the investment decision. Meanwhile, the contradictive research of Khalid *et al.* (2016) mentioned that

financial literacy cannot moderate the relation of overconfidence with the investment decision that describes the involvement of knowledge and skill of a person about finance but does not affect their overconfidence in the investment decision. Based on the background of the study, the writer interested in conducting the research with the title “The Influence of *Behavioral Bias, Cognitive Bias, and Emotional Bias* on Investment Decision for College Students in the University Investment Gallery in Surabaya, with *Financial Literacy* as the Moderating Variable.”

2. Literature review and Hypothesis

2.1. Literature review

2.1.1. Decision Theory

Decision Theory as stated by Hansson (1994) is a theory about a decision that describes how a person decides a decision about something as the freedom they have. When taking a decision, a person will face some options that they have to choose and take one of those as consideration, and which will lead to achieving a desired goal. It can be interpreted that decision theory is related to behavior directed to achieve a goal with various options. There are two types of decision theory, is normative decision theory and descriptive theory. Normative decision theory is a decision theory can explains how a decision must be made, and normative decision theory is a decision must be made with rational decision making.

2.1.2. Herding Theory

Herding Theory is a theory that defines an individual in doing an action as the activity that the other does instead of following the information, they have in taking an action (Tuominen, 2017) *Herding Theory* explained that information used individuals to take a decision is divided two types, information from the individual itself which reflects his preferences, and information from actions by other individuals on a similar problem.

2.1.3. Behavioral Finance Theory

Behavioral Finance Theory as mentioned by Manurung (2012), is an investment analysis by using psychology theory and financial knowledge or can be called as financial behavior. There is a psychological factor that influences a person in conducting an investment with the purpose of achieving their goal. Pompian (2006) categorized that *behavioral finance* into two types, *behavioral finance mikro* and *behavioral finance makro*. *Behavioral finance mikro*, behavior bias from irrational individual behavior. *behavioral finance makro*, explain about behavioral models can describe anomalies, when market efficiency occurs. Pompian (2006) categorized those into two points; they are *cognitive bias* and *emotional bias*.

2.1.4. Prospect Theory

Prospect theory based on Kahneman and Tversky (1979), is a theory regarding the decision making of a person in a condition that led into uncertain result. It also can be said that an individual cannot always move as the finance theory by considering the risk and uncertainty, but the person will give additional uncertainty factors (psychology and behavior) to get a rational choice. The principles of prospect theory:

a. Value function

Prospect theory will provide a value in the framework between gains and losses

b. Framing Effect

Prospect theory will predict the tendency to choose to make dependence on a problem

c. Psychological Accounting

Prospect theory predicts a person’s tendency to make investment decision based on decision consideration

d. Certainly effect

Prospect theory predict that risk-free choices

2.1.5. Investment Decisions

Investment Decision is a choice that will be chosen in collecting more income of an asset or more with the hope of beneficial return in the future. It is also a way of choosing the right alternative investment among alternative options. When making decisions, investor is influenced by various factors, including demographics, economic, social background, gender, and age.

2.1.6. Herding Bias

The behavior of *Herding Bias* is a tendency of an investor to follow other investor's decision in doing investment and do not use a deep fundamental analysis first which led into the inefficient market.

2.1.7. Disposition Effect

Disposition Effect bias is a tendency of an investor in selling their productive investment hurriedly without doing analysis before. It also a bias in defending unvalued investment with the expectation that the investment will be a good value in the future.

2.1.8. Risk Perception

Risk Perception is a perspective of an investor in taking the risk of the investment chosen.

2.1.9. Overconfidence

Overconfidence is the confidence of an investor that is too much. They tend to be over in the market that they involve, expecting a huge result of the investment and their success. Sometimes the investor connects this idea with the skill they have.

2.1.10. Representativeness

Representativeness is a tendency of an investor in doing investment by using their experience in the past and based on their psychological condition. This factor may lead some of them in taking a decision too fast without doing a deep analysis since they always rely on their experience in doing investment.

2.1.11. Experience Regret

Experience Regret is the feeling of disappointment because of the mistake in the past and affects in taking a decision in the future. It also may happen if a person is still doing a long period investment but the result of the investment is not as expected.

2.1.12. Financial Literacy

Financial Literacy is a fundamental knowledge of finance and its products to be managed. It also uses as the reference in decision making effectively to achieve a return in the future.

2.2. Hypothesis

2.2.1. The Influence of Herding Bias in Investment Decision

Herding is a tendency of an investor to follow other investor's decision in choosing the investment decision. By following other people's suggestion, the investor tends to be more optimism about the investment they made. For a beginner investor, this kind of principle happened. It is because they believe in the knowledge of other investor's investment more than their self. The higher *herding bias* of the investor, the more irrational investment decision that the beginner investor makes. The investor will follow other investor's suggestion without comparing into other principles which may affect their investment.

H1: There is a *herding bias* effect in the investment decision.

2.2.2. The Influence of Disposition Effect towards the Investment Decision

The disposition effect is a tendency of an investor in deciding to buy or sell the stocks they have hurriedly and without any other consideration. This kind of principle may lead to the value of stocks fluctuation in the stock exchange and can cause some decisions to become irrational. The higher *disposition*

effect, the more irrational choice of investment they get. The reason is that the investor is to rush in responding to the information displayed in the stock exchange, without comparing into any other consideration.

H2: There is an influence of *disposition effect* towards the investment decision.

2.2.3. The Influence of Risk Perception towards the Investment Decision

Risk perception is a tendency of an investor in comparing the risk that may happen in realizing their investment decision. The investor will pay attention more into some risks that they will receive in the investment they made. This principle is used so the investor will be more convinced about their investment decision they conduct. The more the investor considers the possible risk, the more optimists they are into their investment. It also has a positive effect on the decision they made.

H3: There is an influence regarding the *risk perception* towards the investment decision.

2.2.4. The Influence of Overconfidence Effect towards the Investment Decision

Overconfidence is a situation where a person has too much confidence in the decision they make. The investor who has this kind of principle tends to make a decision by their feeling. They feel so convinced because of the experience and also the skill they have in choosing stocks. It also affects them in feeling convinced to the result of their investment. The decision that only based on the feeling and the instinct may lead the investor into an irrational investment decision.

H4: There is an influence of *overconfidence* towards the investment decision.

2.2.5. The Influence of Representativeness towards the Investment Decision

Representativeness is an investor attitude that always depends on their experience based on the past experience of investment. It is also a tendency of the overconfidence towards a *stereotype*. It led to the result that the investment decision of the investor is not only based on past experience but also based on their psychological condition.

H5: There is an influence of *representativeness* towards the investment decision.

2.2.6. The Influence of Experience Regret towards the Investment Decision

Experience Regret is a tendency of an investor in using their bad experience in the past in making the decision of investment. The bad experience (encounter loss or profit in choosing the types of investment) may affect the investment decision that they will choose in the future. An investor who thinks about that experience as a great experience will make them be a braver person in doing the high-risk investment and them also count the future risk of an investment in making an investment decision. On the other hand, the other investor will tend to be more careful so they can achieve a maximum profit and avoid the loss.

H6: There is an influence of *experience regret* towards the investment decision.

2.2.7. The Influence of Financial Literacy towards the Investment Decision

Financial literacy is the ability of a person owned in understanding the mechanism of capital management. For instance, how to utilize, manage, and invest the capital owned by the person. The higher the *financial literacy* of an investor, the more understanding they are about the finance field, from knowing the risks that they will deal in the future, having skills and abilities of the fund they have. For this reason, it will increase the possibility of making a decision about the investment they made. Those possibilities may happen due to their skills in predicting the possible opportunity in making the investment. Otherwise, if a person has a poor skill in *financial literacy*, they will be more careful in making an investment decision.

H7: There is an influence of *financial literacy* towards the investment decision.

2.2.8. The Financial Literacy Role in Moderating Variable can moderate the Relation of Herding Bias towards the Investment Decision

Financial literacy is the ability of a person owned in understanding the mechanism of capital management. An investor with the high skill of *financial literacy* is more interested in using the financial information of their company before making the investment decision. Otherwise, an investor with the low

skill of *financial literacy* depends more on the suggestion of their broker, friend, and family. A high leveled *financial literacy* investor can minimalize or weakened the behavior of *herding* which may happen to the investor in making the investment decision. Thus, the investor depends more on the knowledge they have in conducting an investment.

H8: *financial literacy* can moderate the relation between *herding bias* with the investment decision.

2.2.9. The Financial Literacy Role in Moderating Variable can moderate the Relation of Herding Bias towards the Investment Decision

Financial literacy is the ability of a person owned in understanding the mechanism of capital management. An investor with the high skill of *financial literacy* can decrease the level of *overconfidence*. The reason is that they have better knowledge and skills in finance field that can lead in considering the other possible aspects of the investment decision. For instance, the aspect is the type of stocks chosen or the possible risk in the future. Besides, the investor tends to consider other factors like the level of interest, the level of the coupon, fluctuate inflection, and other economic condition which may influence the level of their confidence in the investment decision. The reason is that the level of *overconfidence* in making the investment can cause a mistake in the investment decision.

H9: *financial literacy* can moderate the relation between *overconfidence* with the investment decision.

3. Methodology of research

The type of study used conclusive causality research that has a function in exploring the relation of cause and effect in the independent variable and dependent variable (Malhotra, 2017). This research also used quantitative approach by using data in *numeric*. This study also used quantitative data by using a collecting method and questionnaire. The category of the questionnaire for the correspondence will be displayed in the statement (Ghozali, 2013).

The population of this research is the university students that have Investment Gallery in Surabaya. The investment galley addressed is in Widya Mandala University, State Surabaya University, Bhayangkara University, Dr. Soetomo University, and Politeknik Pelayaran Surabaya. The sampling technique of the research is *purposive sampling* and *snowball sampling* with the criteria of have been doing an investment approximately three months, doing *trading* approximately three times, and making an investment in stocks instruments.

The technique of data analysis of this study used multiple linear regression analysis. The multiple linear regression analysis is a technique of analysis used to test the independent variable towards the dependent variable. This analysis supported by the software SPSS version 18. As the research model used:

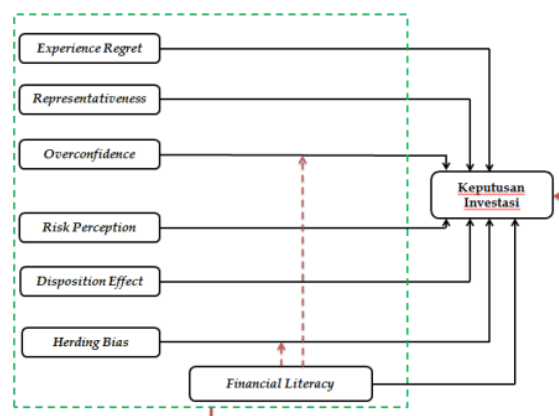


Figure 3. Research Model

- > : Influence
- - -> : Moderating

The technique of data analysis used the classic assumption test that consists of a normality test, heteroscedasticity test, and multicollinearity test. The normality test used by observing the residual values with the normal distribution. The normality test also used *normal probability plot* graphic analysis and *Kolmogorov-Smirnov* (K-S) statistics test. For the heteroscedasticity test, it used a *scatterplot* graphic test and *rho-spearman* analysis test. In addition, the multicollinearity test used VIF value. The technique of data analysis also used the hypothesis test. The hypothesis test was used to predict temporary prediction from the previous studies. The significant test was also conducted along with the (F Test), T Statistic Test, and determination coefficient (R^2). On the other hand, there is also an MRA (*Multiple Regression Analysis*) tests to distinguish the types of moderating conducted in the study.

4. Results

The study conducted with the number of 212 respondents. The result also showed some of the respondent characteristics. The gender percentage showed that there are more women with 60,37% comparing to the men in 39.63%. Based on the age of respondents, the average is in the year of 21 years old with the number of 90 people or 42.45%. All of the respondents have done *trading* three times. From most to least, the number of the respondents are from State University of Surabaya with the number of 92 respondents (43.39%), Bhayangkara University with the number of 49 respondents (23.11%), Politeknik Perkapalan Surabaya (18,87%), Dr. Soetomo University (8,96%), and Widya Mandala University (5.67%).

Based on the output result of SPSS in *Kolmogorov Smirnov* (K-S) test, it showed that the value of significant is 0.718. The value is higher than the signification 5% or 0.05. It can be concluded that the residual distributed normally. For the heteroscedasticity with *Spearman* test, the value of the significance is higher than 0.05. It can be said that the research does not undergo the heteroscedasticity. For the test of multicollinearity, the VIF value showed the result with no more than 10 but more than 0.1. Based on the result, the regression model does not undergo multicollinearity tendency. Based on all of the circumstances, it can be concluded that the data is in the normal distribution in the variable of *behavioral bias*, *cognitive bias*, and *emotional bias*.

4.1. F Test Result

Based on the calculation of the F statistic test, it can be seen that there is significant value with the number of 0.000. The value is smaller than 0.05 that taken as the base of making a decision. The result also showed that the model is feasible and can be used for any further test.

4.2. T Test Result

Table 1. Output F-Test and t-Test

	Model	Mean Square	F	Sig.
	Regression	296.109	31.425	.000 ^a
	Residual	9.423		
Total				
Model	Unstandardized Coefficients B	t	Sig.	
1	(Constant)	6.029	2.786	.006
	Herding Bias	.321	2.677	.008
	Disposition Effect	-.091	-1.043	.298
	Risk Perception	.267	2.584	.010
	Overconfidence	.481	4.983	.000
	Representativeness	.232	3.211	.002
	Experience Regret	.111	1.625	.106
	Financial Literacy	.390	3.801	.000

Based on the calculation, there are some *herding bias*, *risk perception*, *overconfidence*, *representativeness*, and *financial literacy* variable that showed about a significant result. Besides, the variable of *disposition effect* and *experience regret* does not show a significant result. For the reason, the equation of the regression used is shown above:

$$KI = 6.029 + 0,321He - 0,091 De + 0,297Rp + 0,481 Ov + 0,232Re + 0,111Er + 0,390 FI + \epsilon \quad (1)$$

Multiple Regression Analysis (MRA) test, used to find out the type of moderating variable. In the research, use two predictors (herding bias and overconfidence). Interaction test used to test the interaction of the moderating variable on the relationship between an independent variable and dependent variable. So, it is necessary to compare the two regression equations to determine the type of moderating variable. This can be known based on the table 2:

Table 2. Interaction Test

Influence with criterion and or predictor		Don't influence with criterion and predictor	
Don't interact with predictor	1 <i>Intervening, Exogen, antecedents, Predictor</i>	2 Moderator (Homologizer)	
Do interact with predictor	3 Moderator (Quasi moderator)	4 Moderator (<i>pure moderator</i>)	

In table 2, if variable (*financial literacy*) in tabulation toward to criterion/predictor on the equation 1 significant, and interaction predictor*moderating on the equation 2 not significant, result that the variable is not a moderating variables, besides, it is considered as the independent variable ($b_1 = 0; b_2 \neq 0$). If Z variable (*financial literacy*) toward to criterion on the equation 1 not significant, and interaction predictor*moderating on the equation 2 not significant, results that the variable is *homologized* ($b_2 \neq 0; b_3 \neq 0$). *Pure moderator*, if Z variable Z in tabulation toward to criterion on the equation 1 not significant, and interaction on the equation significant ($b_1 \neq 0; b_2 = 0$). Z variables is a *quasi-moderator* if on the equation 1 significant, and interaction predictor*moderating on the equation 2 significant. ($b_2 = 0; b_3=0$) (Ghozali, 2013). From the result of the regression used to determine the *financial literacy* variable which also considers the possibility as the moderator, the research did the *herding* variable regression and *overconfidence* with the moderator variable (*financial literacy*) towards the investment decision with the result:

Table 3. Output Regression

Model		B	t-value	Sig.	detail
<i>Herding Bias*Financial Literacy</i>					
1	Z-score	0,526	4.188	0,000	sign.
	HB				
	Z-score FL	0,686	6.910	0,000	sign.
	Z-score HB	0,877	1.543	0,124	tidak sign.
2	Zscore FL	1.031	1.860	0,064	tidak sign.
	Zr. HB*FL	-0,022	-0,634	0,527	tidak sign.
<i>Overconfidence*Financial Literacy</i>					
1	Z-score	0,593	6.007	0,000	sign.
	Ov				
	Z-score FL	0,625	6.694	0,000	sign.
	Zscore Ov	0,787	1.803	0,073	tidak sign.
2	Zscore FL	0,802	2.004	0,046	sign.
	Zscr Ov*FL	-0,012	-0,456	0,649	tidak sign.

In table 3, based on the analysis of regression test, it can be seen result moderating variable (*financial literacy*) has an interact/significant with investment decision variable, but moderating variable (*herding bias*financial literacy* and *overconfidence*financial literacy*) not interact/not significantly toward to investment decision. Besides, it is considered as moderating variable (*financial literacy*) in the quadrant 1, *financial literacy* as the independent variable, not the moderating variable. This is in the first equation, the *financial literacy* (which function as an independent variable) shows significant. Whereas, in the second equation, the result of the interaction between *herding bias*financial literacy* and *overconfidence*financial literacy* show insignificant value, which means that interaction between *financial literacy* with *herding bias* and *overconfidence* cannot strengthen or weaken toward the investment decision.

5. Discussions

5.1. *The Influence of Herding Bias Towards the Investment Decision*

Based on the analysis of regression test conducted, it can be seen that the variable of *herding bias* has a positive influence on the investment decision. It also shows that the more the respondents follow the suggestion of their broker, friend, family, or group, the more possible they decide to do an investment. The reason is that most of the respondents tend to consider the suggestion that given by their friend or broker in deciding to make an investment and having the profit in the future. Besides, the investor also used their experience from the previous investment. One of them is by following the suggestion given by their broker or friend who has experience in investment that giving a higher profit. The finding also related to the *herd theory* which stated that an individual makes an action based on the similar activity of the other people.

The finding also proved by the average of the statements from the respondents. The data showed that the *mean* is 3.70 on the category of higher level. It shows that the majority of the respondents are considering the suggestion given by their friends or broker in the investment decision. This idea also proves the research by Ghalandari and Ghahremanpour (2013) that found about the *herding bias* influences towards the investment decision of the investors in Iran. They also found that those investors are more depended to the collective information from the broker. It made the individual investor must have a good choice in dealing with the investor partner (broker) so they can make them as the reference in the investment decision. A research conducted by Alrabadi *et al.* (2018); Athur (2014); Hayat and Anwar (2016); Qasim *et al.* (2018) also showed the result that the investor copied their information to the other and some of them did the same way as the broker did in choosing the option to sell or buy the stocks.

5.2. *The Influence of Disposition Effect Towards the Investment Decision*

From the result of the regression test, it shows that the *disposition effect* variable has no relation towards the investment decision. This result also does not relate to the *prospect theory*. It could happen because the investor did not tend to move faster in responding to the bad condition of the market. The investor focused more on making consideration of the risk instead of the value of *return* they get before decided to sell their stocks. The finding of the research also mentioned that there is no relation between the quick decisions in making the investment with the investment decision. It is because most of the investors used their knowledge in a previous investment like the investment in other financial instruments (forex and foreign currency) and money market in making the decision of their stocks. The experience is also made the respondents pay attention to the other information and understanding the market condition also counting the profit and risk they will get if they sell their stock at a high price. The skills, abilities, and knowledge of the respondents affect them into uncertainty to sell their stocks right away. It is because they think that the stocks will be more profitable in the future rather than sell it at the moment.

The result is also proved by the average of the questions of the respondents which showed the number of 2.93. It showed that the average of respondents does not respond quickly on the market condition and they are quick in making the decision to buy and sell their stocks. Otherwise, they also consider the factors that influence stock investment in the future. This finding is related to Hayat and Anwar (2016) in Pakistan. The research found that *the disposition effect* does not influence an investment decision. In addition, this research also mentioned that *disposition effect* always happens to the long-period investment. On the other hand, for the short-period investment, *disposition effect* does not always happen in the stock exchange.

5.3. *The Influence of Risk Perception Towards the Investment Decision*

From the regression analysis test, it showed that the influence of *risk perception* variable is occurring towards the investment decision. It is because most of the majority of respondents has a skill of investment so they have experience in calculating the possible risks in the future. The finding of the study does not relate to the *prospect theory* which stated that an individual is not always making a decision based on the finance theory that considering the risk and the uncertainty instead of using the psychological factor in an investment decision. On the other hand, the respondents used consideration of the possible risks first before making the decision.

The result of the study also supported by the number of the respondents mean in 2.92 (in average criteria) that showed about some of the investors made a calculation to the possible risks in the future so they are brave in taking those risks. This result also showed that the higher the *risk perception*, the higher the investment decision is made because the respondents had calculated the possible risks in the future and they are sure about the investment they made at the moment. In addition, their investment also gives a profit like a past investment. By the experience in calculating the possible risks in the future, it also increases their braveness in the investment decision. This finding relates to the research of Wulandari and Iramani (2014) that found there is a significant influence between the *risk perception* and the investment decision. Lastly, this research also found that investors have a different perception in making the decision.

5.4. The Influence of Overconfidence Towards the Investment Decision

As mentioned from the regression test analysis, it is found that there is a relation between *overconfidence* variable with the investment decision that can be seen from the respondents who have too much confidence in the investment they have. This result explained that the higher of the *overconfidence*, the higher the investment decision is made. The reason is that the respondent's reaction is too much about the intuition in their self towards the investment they made. The overconfidence of the respondents makes the investors believe that their knowledge and skills of investment are better than the others. The investors become more ambitious to increase their investment. This result relates to the theory of *behavioral finance* which is the *cognitive bias* that explains about the investors have a tendency or sometimes make a mistake in taking the information when it comes to the investment decision. This mistake is may happen due to the investors are likely to rely on their intuition instead of making the possible considerations that may happen in the investment made.

The data is supported with this result from the number of *mean* in the answer of the respondents 3.50 (in average criteria). It also explains that the respondents have a high enough confidence towards the investment decision. The research relates to the study of Kartini and Nugraha (2015); Toma (2015) that found about the *overconfidence* behavior influence the investment decision and the higher the *overconfidence* of an investor, the higher possibility of them to make the investment decision. The other research from Alquraan *et al.* (2016); Alrabadi *et al.* (2018); Budiarto and Susanti (2017); Firah *et al.* (2017); Khalid *et al.* (2016); Pradikasari and Isbanah (2018); Qasim *et al.* (2018) also showed that *overconfidence* has a positive effect on the investment decision.

5.5. The Influence of Representativeness Towards the Investment Decision

The regression test analysis showed that there is an influence between *representativeness* variable towards the investment decision. The result also explained that the respondents used their past experience in considering the investment decision. The experience is about the other instrument finance investment, for instance, forex, foreign currency, and money market before they invest in stocks. This result also described that the higher of the *representativeness* of an investor, the higher the investment decision is made.

The finding relates to the *behavioral finance theory* in the type of *cognitive bias* that explains the behavior of an investor can influence their investment decision. It could happen because of the majority respondents choose a safe and does not fluctuate types of the stock investment. The respondents will protect their stocks and increase the number of investments regarding the stocks if it shows its significant profit. They will always follow their intuition until they get their own goal profit.

This result is supported by the mean answer of the respondents in the number 3.39 which means that some of them tend to use their past experience in taking the decision of investment. The investors tend to buy the same company stocks as their previous decision because they consider the possible risks as well as the previous investment. This finding relates to the research of Alrabadi *et al.* (2018); Athur (2014); Toma (2015) which found that *representativeness* influence the investment decision. The research also found that beginner investors tend to make the same investment decision as to the previous one, moreover, if the investment is profitable. The investors were also unwilling to do diversification of investment because they still have no experience of that kind of investment. The study conducted by

Badshah *et al.* (2016); Manuel and Mathew (2017) also described that the behavior of *overconfidence* influence the investment decision.

5.6. The Influence of Experience Regret Towards the Investment Decision

The result of the regression test analysis mentioned that there is no influence in the investment decision with *experience regret* towards the investment decision. This result can happen because there are no respondents who feel regret to their bad experience in their previous investment and they tend to use the experience as the lesson for not doing the same mistakes in the future investment. They also have a higher expectation in the profit level in future investment. This result explained that bad experience of investment does not influence the investment decision.

This result does not relate to the theory of *behavioral finance* in the type of *emotional bias* that mentioned the behavior of an investor follows their intuition instead of the logical information. The behavior made the investors follow their intuition to not making the same investment because they are worried to have the same mistake as the previous investment. Besides, based on this research, the behavior of *experience regret* does not influence the investment decision of the investors. The investors will use the information they have as the reference to their experience so they will not make the same mistake.

The result of this study is supported by the mean of the respondent's answer with the number 3.72. It explained that the respondents do not feel disappointed for their previous investment. This finding relates to the research of Wardani (2016) explored that the bad experience that happened to the investors will give a lesson and experience for the next investment. In addition, the investors become surer and braver in taking the investment decision based on their previous investment experience. It also relates to the research conducted by Fachrudin and Fachrudin (2016); Wulandari and Iramani (2014) that said about there is no influence between *experience regret* towards the investment decision. Furthermore, the research also found that the behavior of *experience regret* of a person happens when they keep doing the investment year by year but the result is not as expected.

5.7. The Influence of Financial Literacy Towards the Investment Decision

Based on the regression test analysis, it showed that there is an influence of *financial literacy* variable towards the investment decision. It could happen because the investors have knowledge from their experience and the information they get is from the company or brokers. Besides, the investors, who are a university student, have the knowledge from their college environment mainly from the company's fundamental analysis. It comes to the result that the investment decision is made because of those reasons. This finding also describes that the higher the *financial literacy* of a person, the higher the investment decision is made.

This result is supported by the mean of the respondent's answer with the number 3.28. The amount showed that the respondents have enough knowledge regarding the stocks and stock exchange before making the investment decision. The result of this research relates to the study conducted by Wardani (2016). She found that *financial literacy* has an influence on the investment decision. It also made the investors easy to get the information they need about the company's stocks that they are interested in. In addition, they have an easy way to analyze and decide on their choice. For the reason, the investment they made will make them surer and give a profit in the future.

5.8. Financial Literacy Moderates the Relation of Herding Bias Towards the Investment Decision

It can be seen from the regression test analysis that *financial literacy* cannot moderate the relation of *herding bias* towards the investment decision. The result also showed that *financial literacy* has a function as the independent variable but not as the moderate variable. It is because *financial literacy* is one of the aspects used for investors in making the investment decision. On the other hand, some of the respondents consider and make the suggestion from the broker or friend as the final decision in the investment decision. Based on the experience and recommendation of a friend, the investors will get a profit and make the respondents re-buy the investment for getting more profit in the future.

This finding relates to the research of Hayat and Anwar (2016) that explained *financial literacy* cannot moderate the relation between *herding bias* with the investment decision that the investor's made

in *Karachi Stock Exchange* and *Islamabad Stock Exchange*. The research found that the investors have a poor knowledge towards the fundamental of finance in the investment decision. The result of the study also describes that the investors will always behave *herding* towards their investment if it always gives profit over and over again. It also relates to the theory of *herding* that said about a person make a decision based on the decision made by the other investor. In this research, the investors have considered that public information is more profitable rather than their own preference so they will keep doing this belief as to the base in the future investment decision. The other reason is also because of the convince of the investors that the broker has more exact information rather than their own information. The optimistic confidence to the other investors also makes the investors convinced that the investment decision they made will give more *return* in the future. The investors were also sure that the investment they made will become a valued experience and profitable in the market movements so the *financial literacy* of the investors will also increase.

5.9. Financial Literacy Moderates the Relation of Overconfidence Towards the Investment Decision

The result of the regression test analysis explained that *financial literacy* cannot moderate the relation of *overconfidence* towards the investment decision. The reason is that the financial literacy variable of the research is not an independent variable and not as the moderate variable. This idea is proved by the regression result conducted that mentioned the *financial literacy* variable influence the significance of the investment decision. However, the regression result moderates the *overconfidence*financial literacy* towards the investment decision showed an insignificant result. This could happen since the intuition of an investor is more dominant rather than the intellectual activity of information they have. The investors who have experience in doing an investment previously or thus who follow the recommendation of the other people will have too much confidence towards the investment decision they made that may get a profit quickly.

This finding is the same as the research conducted by Khalid *et al.* (2016) that found the *financial literacy* cannot moderate the relation between *overconfidence* towards the investment decision. This research also found that investors with a higher knowledge of finance are likely interested to use technical analysis and fundamental analysis instead of investors with poor knowledge. The investors who have high *financial literacy* are more likely to gain information regarding the finance publication. It is in contrast with the other with the poor *financial literacy* who always follows their intuition in making an investment decision. Based on the circumstances, the confidence owned by each investor may vary. It also appropriates as their own perception.

The result of this research describes that the confidence owned by the investors is very high. It is because they believe that their investment has come to the appropriate way. The investors feel that the company's stocks they owned will give a high *return* so they will be not worried about the fluctuating market movement. The knowledge and the confidence of the investors are based on their trust to the broker (investment partner) that becomes their relation to their investment.

6. Conclusions

Based on the research finding, the writer can conclude several ideas, (1) *herding bias* influence the investment decision and show that the respondents consider the suggestion from brokers or their friend in the investment decision. This could happen because the respondents have a certainty that the investment decision conducted by other people will give a profit for their self in the future. (2) *Disposition effect* does not influence the investment decision. The reason is that the investors do not directly sell their owned productive stocks when the stocks are at the highest cost. They use their knowledge in the previous investment about the other instrument of finance like forex, foreign currency, and money market in conducting the investment decision they made. The skills, abilities, and knowledge of the respondents may affect them into uncertainty to sell their stocks at the moment because they want to predict the cost of the stock will be more profitable in the future instead of selling it at the moment. (3) *Risk perception* influences the investment decision. It is based on the majority of the respondents have an ability in doing investment so they will have more experience in calculating the possible risks in the future. (4) *Overconfidence* influence the investment decision which comes to the result some respondents overreact the intuition of

their own self towards the investment decision. This kind of overconfidence made the investors has more convinced that their knowledge and skills of investment are better than the other. (5) *Representativeness* influence investment decision. The explanation is because some of the respondents used their experience from the other financial instruments (forex, foreign currency, and money market) in doing stock investment. The previous experience gives a description to the respondents in choosing the types or time in the stock investment. (6) *Experience regret* does not influence the investment decision. It happened since some respondents do not regret in doing investment although they encountered the loss or deception. The respondents used their bad experience as the lesson and a reference to the stock investment they made so they will not face the same mistake like in the previous time. (7) The behavior of *financial literacy* influence towards the investment decision since most of the investors gain knowledge from their own experience and gain information from the company. Otherwise, the investors who are the university students gain the knowledge from the college environment mainly from the fundamental analysis of a company so they only rely on those pieces of knowledge in the investment decision. (8) The *financial literacy* cannot moderate the relation between *herding bias* towards the investment decision. It is possible since *financial literacy* is not a moderate variable but have a role as an independent variable. The other reason is that the *financial literacy* owned by an investor cannot decrease the behavior of copying the other investors in making the investment decision. Nevertheless, *financial literacy* also becomes one of the factors of the investor is considering making an investment decision. (9) *Financial literacy* cannot moderate the relation between *overconfidence* towards the investment decision. It may happen since *financial literacy* role is not as the moderate variable but as the independent variable. It comes to the result that *financial literacy* owned by an investor cannot decrease the level of their *overconfidence*. Meanwhile, with the existence of *financial literacy*, the investor will consider all the possible factors in the future from the knowledge, skills, and experiences they have during their time of investment.

The result of this research hopefully can be used for the investors, especially for the university students who conducted the stock investment. The writer suggests that they have to choose their investment partner (broker) who has a high level of credibility. For the beginner investor, this kind of suggestion is really needed because the investment partner can give a suggestion of alternative choices of the company stocks with a good performance. A broker surely must have experiences and have calculated the possible risks in every company existed in stock exchange so their consideration will be accurate. A broker also has more public information instead of the other investors who more likely to analyze and looking for their own information. By choosing the right broker, the investors will be more *overconfidence* with the investment they made and do not easy influenced by the fluctuating market cost movement. The reason is that the investor has the knowledge and skills from the broker who rates the market movement and makes it as a reference to investing in the future.

For the future researcher, the writer suggests testing the *financial literacy* variable not only as of the independent variable but also moderate variable. Besides, the future researcher can also conduct research related to *financial literacy* as the *intervening* variable. In addition, based on the result of R^2 showed the number of 50.2% means an independent variable can only explain 50.2% dependent variable. Meanwhile, the other 49.8% explained by the other variable so the writer suggests to test by using the other independent variable such as, *anchoring and adjustment*, *cognitive dissonance*, *availability bias*, *self-attribution bias*, *conservatism bias*, *ambiguity aversion bias*, *mental accounting*, *confirmation bias*, *framing bias*, *recency bias*, *endowment bias*, *self-control bias*, *loss aversion bias*, *status quo bias*, and *hindsight bias*. It also hopes that the future researcher can give a more accurate result in explaining the factors of investment decision. For the securities company, the writer hopes that they can increase the number of investors in the stock exchange by socializing and educating about the importance of investment at a young age. Besides, the securities may also give education about the mechanism of the right investment without behaving irrationally. The lack of information regarding the stock exchange and the lack of the activity of the securities to the university students caused the students to only to rely on the friend's suggestion in the investment decision. Therefore, hopefully in the future, the securities company can be more active in the involvement to increase the knowledge, skills, and the number of young investors in the stock exchange. In addition, Financial Services Authority (OJK) can also conduct monitoring and involve with the securities company in giving new knowledge for the young investors about the company's cooperation in the stock

exchange or the involvement to give deep analysis about the capital market and their products as well as the stock instruments. If the suggestion is conducted, it leads to the result that there is a synergy between the securities company, Indonesia Stock Exchange (BEI) and Financial Services Authority (OJK) in increasing the young investors in the capital market.

References

1. Alquraan, T., Alqisie, A., & Shofa, A. Al. (2016). Do Behavioral Finance Factors Influence Stock Investment Decisions of Individual Investors ? (Evidences from Saudi Stock Market). *American International Journal of Contemporary Research*, 6(3), 159–169. <https://doi.org/10.7537/marsjas120916.12>
2. Alrabadi, D. W. H., Al-abdallah, S. Y., Ibrahim, N., & Aljarayesh, N. I. A. (2018). Behavioral Biases and Investment Performance : Does Gender Matter ? Evidence from Amman Stock Exchange. *Jordan Journal of Economic Science*, 5(1), 77–92.
3. Alwahaibi, S. S. O. (2019). Is Demographic Information Influence Risk Tolerance / Aversion in Investment Decision ? Evidences from Literature Review. *International Journal of Academic Research in Accounting, Finance, and Management Sciences*, 9(1), 111–122. <https://doi.org/10.6007/IJARAFMS/v9-i1/5825>
4. Andi, D., & Kartini, D. (2017). Survei Schroders: Publik Andalkan Saham dan Obligasi. Retrieved November 22, 2018, from <https://investasi.kontan.co.id/news/survei-schroder-publik-andalkan-saham-obligasi>
5. Athur, A. D. (2014). Effect of Behavioral Biases on Investment Decisions of Individual Investors in Kenya. *School of Business, University of Nairobi*, (November), 1–98.
6. Badshah, W., Irshad, S., & Hakam, U. (2016). Effect of Representativeness Bias on Investment Decision Making. *Management and Administrative Sciences Review*, 5(1), 26–30. Retrieved from www.absronline.org/journals
7. Budiarto, A., & Susanti. (2017). Pengaruh Financial Literacy, Overconfidence, Regret Aversion Bias, dan Risk Tolerance terhadap Keputusan Investasi (Studi pada Investor PT. Sucorinvest Central Gani Galeri Investasi BEI Universitas Negeri Surabaya). *Jurnal Ilmu Manajemen*, 05(2), 1–9.
8. Fachrudin, K. R., & Fachrudin, K. A. (2016). The Influence of Education and Experience toward Investment Decision with Moderated By Financial Literacy. *Polish Journal of Management Studies*, 14(2), 51–60. <https://doi.org/10.17512/pjms.2016.14.2.05>
9. Firah, A., Tetap, D., & Dharmawangsa, U. (2017). Pengaruh Kompetensi dan Overconfidence Investor Terhadap Keputusan Investasi Investor Saham di Kota Medan. *Majalah Ilmiah Politeknik Mandiri Bina Prestasi*, 6(2), 288–301.
10. Ghalandari, K., & Ghahremanpour, J. (2013). The Effect of Market Variables and Herding Effect on Investment Decision as Factor Influencing Investment Performance in Iran. *Journal of Basic and Applied Scientific Research*, 3(3), 313–318. Retrieved from [https://www.textroad.com/pdf/JBASR/J. Basic. Appl. Sci. Res., 3\(3\)313-318, 2013.pdf](https://www.textroad.com/pdf/JBASR/J. Basic. Appl. Sci. Res., 3(3)313-318, 2013.pdf)
11. Ghazali, I. (2013). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 23* (8th ed.). Semarang: Badan Penerbit Universitas Diponegoro.
12. Hansson, S. O. (1994). *Decision Theory*. Stockholm, Swedia.
13. Hayat, A., & Anwar, M. (2016). Impact of Behavioral Biases on Investment Decision; Moderating Role of Financial Literacy. *SSRN Electronic Journal*, 1–14. <https://doi.org/10.2139/ssrn.2842502>
14. Irijayanti, Dwi ; Kurniawati, S. L. (2017). Pengaruh Literasi Keuangan , Representativeness, Familiarity, dan Persepsi Risiko terhadap Pengambilan Keputusan Investasi pada Investor Surabaya dan Sidoarjo. *STIE Perbanas*, 1–17.
15. Jawapos. (2018). Jatim Urutan 3 Jumlah Investor Pasar Modal. Retrieved November 21, 2018, from <https://radarsurabaya.jawapos.com/read/2018/04/18/66040/jatim-urutan-3-jumlah-investor-pasar-modal>
16. Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision Under Risk. *Econometrica*, 47(2), 263–289.

17. Khalid, R., Javed, M. usman, & Khurram, S. (2016). Impact of Behavioral Biases on Investment Decision; Moderating Role of Financial Literacy. *SSRN Electronic Journal*, 6(2), 1–14. <https://doi.org/10.2139/ssrn.2842502>
18. Kontan.co.id. (2018). Porsi Milenial di Pasar Modal Mulai Bertumbuh. Retrieved November 22, 2018, from <https://investasi.kontan.co.id/news/porsi-milenial-di-pasar-modal-mulai-bertumbuh>
19. KSEI. (2018). Berita Pers 21 Tahun KSEI: Inovasi Untuk Kenyamanan Transaksi di Pasar Modal. Retrieved from www.ksei.co.id/.../156_berita_pers_21_tahun_ksei_inovasi_untuk_kenyamanan_transaksi_di_pasar_modal
20. Manuel, J., & Mathew, G. (2017). Impact of Cognitive Biases in Investment Decisions of Individual Investors in Stock Market. *International Journal of Engineering Technology, Management, and Applied Sciences*, 5(3), 74–77. Retrieved from [http://www.ijritcc.org/download/conferences/ICEMTE_2017/Track_6_\(Others\)/1489991707_20-03-2017.pdf](http://www.ijritcc.org/download/conferences/ICEMTE_2017/Track_6_(Others)/1489991707_20-03-2017.pdf)
21. Manurung, A. H. (2012). Teori Perilaku Keuangan (Behaviour Finance). *Economis of Management*, 41(4), 1–13. <https://doi.org/10.3748/wjg.v21.i40.11331>
22. Pompian, M. M. (2006). *Behavioral Finance and Wealth Management*. United States of America: Hohn Wiley& Sons, Inc., Hoboken, New Jersey.
23. Pradikasari, E., & Isbanah, Y. (2018). Pengaruh Financial Literacy, Illusion of Control, Overconfidence, Risk Tolerance, dan Risk Perception terhadap Keputusan Investasi pada Mahasiswa di Kota Surabaya. *Jurnal Ilmu Manajemen*, 6(4), 424–434.
24. Putra, I. P. S., Ananingtiyas, H., Sari, D. R., Dewi, A. S., & Silvy, M. (2016). Experienced Regret, dan Risk Tolerance pada Pemilihan Jenis Investasi. *Journal of Business and Banking*, 5(2), 271–282. <https://doi.org/10.14414/jbb.v5i2.548>
25. Qasim, M., Hussain, R. Y., Mehboob, I., & Arshad, M. (2018). Impact of Herding Behavior and Overconfidence Bias on Investors Decision Making in Pakistan. *Accounting*, 5(July), 0–10. <https://doi.org/10.5267/j.ac.2018.07.001>
26. Setiawan, Y. C. (2017). Cognitive Dissonance Bias dan Herding Bias dalam Pengambilan Keputusan Investasi Saham. *Ekonomi*, 1(1), 11. <https://doi.org/26.82017/JKP.2017.001>
27. Tanvir, M., Sufyan, M., & Ahsan, A. (2016). Investor's Emotional Intelligence and Impact on Investment Decision. *International Journal of Academic Research in Economics and Management Sciences*, 5(3), 12–28. <https://doi.org/10.6007/ijarems/v5-i3/2237>
28. Toma, F.-M. (2015). Behavioral Biases of the Investment Decisions of Romanian Investorson the Bucharest Stock Exchange. *Procedia Economics and Finance*, 32(15), 200–207. [https://doi.org/10.1016/S2212-5671\(15\)01383-0](https://doi.org/10.1016/S2212-5671(15)01383-0)
29. Tuominen, N. (2017). *A Basic Theory of Rational Herd Behavior and Informational Cascades Does it apply to Financial Markets ?* University's School of Business.
30. Wardani, A. K. (2016). Pengaruh Literasi Keuangan , Experienced Regret , Risk Tolerance , Dan Motivasi pada Keputusan Investasi Keluarga dalam Perspektif Masyarakat Bali. *Journal of Economic, Business, and Accountancy Ventura*, 1–17.
31. Wulandari, D. A., & Iramani, R. (2014). Studi Experienced Regret, Risk Tolerance, Overconfidance dan Risk Perception pada Pengambilan Keputusan Investasi Dosen Ekonomi. *Journal of Business and Banking*, 4(1), 55–66.