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The Effect of Overconfidence Bias, Herding Behavior and Experienced Regret on Investment Decision Making on the Indonesia Stock Exchange

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ABSTRACT: Indonesia will experience a surge in investors in 2021 almost twice the number of investors before. Although investment is starting to be favored by the public, not all investors are able to make the right investment decisions. This research examines the influence of overconfidence bias, herding behavior and experienced regret on investment decisions. This study used 184 respondents who live in Jakarta. The sample was obtained through a purposive sampling technique in which respondents had to meet the criteria of having invested in the capital market for at least 1 year and made at least 2 transactions. This study collected data by distributing questionnaires through the Google form and the data was measured using a Likert scale and analyzed using SmartPLS software. The results obtained in this study are over confidence bias has no effect on investment decisions, herding behavior has no effect on investment decisions and experienced regret has a positive effect on investment.

KEYWORDS: overconfidence, herding behavior, experienced regret investment decision

INTRODUCTION

The capital market is a meeting place for issuers who are short on funds and investors who have excess funds. According to Widoatmojo (2015), the capital market is a market that trades long-term funds, namely funds that are involved in investing for more than one year. The existence of the capital market is considered to be one of the pillars in the country's economy. According to Afriyadi (2017), the capital market has contributed more than 10% to the country's economic growth or around IDR 110 trillion in 2016, even though the capital market only contained 535,994 Single Investor Identification (SID) at that time. According to Arlina et al, there are several factors that influence investment decision making, namely from the available information, then forming a decision making model in the form of investment criteria to allow investors to choose the best investment among the available investment alternatives.

Overconfidence is a person's perspective that is biased in terms of seeing a situation, where the person believes that his abilities are more than the actual results (Adiputra et al, 2020). This is supported by the research of Robin and Angelina (2020) which states that overconfidence has a positive effect on investment decisions. However, it is different from the results of Pratiwi and Leon's research (2019) which found results that overconfidence did not have a significant effect on investment decisions. In making decisions, sometimes investors often follow the actions of other investors in making decisions. This event is known as Herding Behavior. According to Luong & Thi Thu Ha (2011), herding behavior is identified as a behavioral tendency of investors to follow the actions of others. This behavior is the most common mistake where investors tend to follow the investment decisions taken by the majority. The main reason for herding is pressure or influence by peers or people around. Herding can make someone suddenly change their decision because herding is heavily influenced by other people's investment choices. Herding includes behavior that is less independent. Although people's choices may be bad. Investors will still follow what the market chooses. Herding behavior is a behavior in which an investor tends to imitate or follow other investors in making investment decisions. The existence of herding behavior in investors can have an impact on the investment decisions they make. This has been proven in research by Pratama et al. (2020) and Adielyani and Mawardi (2021) which state that herding behavior has a positive effect on investment decisions. However, it is different from the research results of Mahadevi and Asandimitra (2021) and Ayudiastuti (2021) who found results that herding behavior did not have a significant effect on investment decisions. The results of the research by Luong & Thi Thu Ha, (2011) revealed that the Herding factor has a positive influence on investment decisions. Meanwhile, research by Gozalie and Anastasia (2015) and Setiawan, et al. (2018) revealed

that herding has no significant effect on investment decisions. And Vijaya's research results (2016) explain that the herding factor has a negative influence on investment decisions.

The next psychological factor is experienced regret, experienced regret is trauma that has occurred to investors due to losses in the past, this phenomenon will be found in investors who have invested but the profit level is not as expected. Research conducted by Wulandari and Iramani (2014) states that Experienced Regret simultaneously has no significant effect on investment decision making. Meanwhile, research conducted by Putra (2015) states that the experienced regret variable has a significant positive effect on investment decision making. This shows that the more someone has investment experience, then that person will also experience losses in investing. Research conducted by Widyastutik (2018) resulted in the experienced regret variable having a significant effect on stock investment decision making in Surabaya. Meanwhile, research conducted by Wardani (2016) found that Experienced Regret did not have a negative effect on the investment decisions of Balinese families in 2016. This means that even though respondents have a high level of tolerance for risk, it does not make respondents take investment decisions that have high risks, such as in capital market.

LITERATURE REVIEW

Overconfidence bias is a behavioral bias that makes investors misguided in making investment decisions, resulting in bad decisions. According to research conducted by Parveen et. al (2021), Kansal and Singh (2018), and Shah et. al (2018) shows the results of overconfidence bias as an independent variable on investment decisions have a negative effect on investors. However, in contrast to the research conducted by Naveed and Taib (2021), Ullah et. al (2017), and Fridana and Asandimitra (2020) that overconfidence bias has a positive and significant relationship to investment decisions. This is similar to what was found by Tanusdjaja (2018) who also found positive and significant results between the two variables. Dewi and Krisnawati (2020) found that the overconfidence behavior of respondents was neither too optimistic nor too pessimistic about their investment results and thought that the information they had was sufficient to make good investment decisions. According to research by Yulianis and Sulistyowati (2021), overconfidence has a significant effect on investment decisions. This proves that investor knowledge in managing finances can increase investor confidence and make them brave in taking action in investing. The results of Budiarto and Susanti's research (2017), Adiputra et al. (2020) and Fridana and Asandimitra (2020) show that overconfidence has a significant positive effect on investment decisions. That is, a high level of overconfidence makes investors more courageous in making investment decisions, while a low level of overconfidence makes investors more careful in making their investment decisions. Likewise, the results of research by Robin and Angelina (2020) and Adielyani and Mawardi (2020) show that overconfidence has a significant positive effect on investment decisions. That is, investors with overconfidence make investment decisions with the belief that the stocks they choose are the right and useful choices in the future. This contradicts Ayudiastuti's research (2021) which found that overconfidence has a significant negative effect on investment decisions. That is, the level of overconfidence affects the way investors react to the information obtained and calculate investment risk based on the information they have. In contrast to the research results of Pratiwi and Leon (2019) and Yuwono and Elmadiani (2021) who found that overconfidence has no significant effect on investment decisions. That is, investors who have overconfidence do not influence their investment decisions because investors make decisions by reflecting on past experience, while investors from the sample in the study do not have sufficient experience in investing.

According to Vieira & Valente (2015), the relationship between herding behavior and investment decision making can cause investors to have two approaches, namely the first in making investor decisions is irrational which is caused by herding instincts or imitating several groups or other investors. Whereas the second approach, where the transfer can be fully rational and there is a deliberate intention of investors to imitate each other. Bikchandani & Sharma (2001) revealed that when they have limited information, investors tend to follow the movements of other investors in making investment decisions which in the end will ignore their signals and follow majority decisions (herding behavior) and form an "information cascade". There are several elements that influence investors' herding behavior, for example: overconfidence, investment volume, and so on. The more confident investors are, the more they rely on their personal information for investment decisions and vice versa. In this case, investors seem less interested in herding behavior. When investors put large amounts of capital into their investor, for example individual investors tend to follow the crowd in making investment decisions more than institutional investors (Ngoc, 2014).

Experienced regret is an experience experienced by someone that causes that person to regret. research conducted by Kinnerson and Bailey (2005), research conducted by Angga Budiarto and Susanti shows that regret aversion bias has a partial effect on investment decisions.

Thinking Framework And Hypotheses

In investing, investors must be prepared for regrets that occur if the expectations we want do not match reality in making stock investment decisions. The majority of women in making decisions are more careful than men who put aside the risks involved. Experienced regret is an experience experienced by someone that causes that person to regret or be disappointed in making investment decisions or even accepting the risk of results from making previous investment decisions (Yohson 2008). This will make someone more courageous to invest in types of investments that have a higher risk, and will calculate the risks that will arise when that person will make an investment decision. So that it can be said that people with high experienced regret will tend to choose the type of investment that has a higher risk, because someone who has experienced experienced regret has sufficient experience in making investment decisions.

Based on financial literacy theory, individuals who have a higher level of financial literacy will have a higher level of welfare. With financial literacy, investors can make rational investment decisions in order to keep pace with the development of complex financial products and financial markets. However, in making these rational decisions, individual investors may become irrational due to psychological factors from investors. Meanwhile, according to behavioral finance in prospect theory, investors are not always rational, but investors always act normally. That way, an investor can make mistakes in decision making. These errors can be caused by emotions, feelings and intuition from within the investor.

Based on the background, the formulation of the problem, as well as the objectives and benefits of the research, the framework can be described as follows:



Figure 1. Thinking Framework

Based on the framework above, the following is a picture of the research model used in this study:



Based on the theoretical framework above, the hypothesis that the author proposes is:

- H1: There is a significant effect of Over Convidance Bias on Investment Decisions
- H2: There is a significant influence of Herding Behavior on Investment Decisions
- H3: There is a significant effect of Experienced Regret on Investment Decisions

METHODS

In this study, the sampling technique used was non-probability sampling with purposive sampling method. Non-probability sampling with purposive sampling method is a sampling technique that is not random and uses a sample selection method based on certain criteria.

According to Roscoe (1975 in Sekaran and Bougie, 2016), in determining the number of samples from a study without subsamples and non-experiments, a rule of thumb can be used, namely, the number of samples is more than 30 to less than 500, and the recommended sample size is 10 times. of the number of variables in a multivariate study. Thus, in this study will use a sample size of 50 to less than 500 individual investors who invest in the Indonesian Stock Exchange. data collection method in this study using a questionnaire or questionnaire. The questionnaire used is in the form of an electronic questionnaire using the Google Form.

Variable Operationalization

The independent variables in this study are Overconfidence Bias and Herding Behavior and Experienced Regret. Overconfidence Bias itself is a form of thinking of someone who has excessive self-confidence so that he thinks he has excessive knowledge and expertise in making decisions. Therefore it can be concluded that the indicators that can define Overconfidence Bias are as follows:

Variabel	Indikator	Kode	Skala
	I am confident in my own ability to do better	OVC1	Interval
	than others		
	I believe that I am better than others when	OVC2	Interval
	making investment decisions.		
	I am more confident in my investment	OVC3	Interval
OverconfidenceBlas	predictions than those of my relatives or other		
	people.		
	I feel confident that the investment will turn	OVC4	Interval
	out well and I have the ability to manage it.		
	I am sure about the time to enter the market	OVC5	Interval
	and exit the market.		
	I am satisfied with my past investment	OVC6	Interval
	decision making.stasi saya di masa lalu.		
ource: Adapted from	Ahmad et. al (2020): Jains et. al (2020) some mod	ified.	•

Table 1	Variable	Operationa	lization of	Overconf	idence	Rias
I able T.	variable	Operationa		Overcom	IUCIICE	Dias

Herding Behavior

Herding behavior is the following behavior that is carried out by investors towards other investors when making investment decisions with the motive to maintain their good performance and feel safe when they are with their group. The following is table 3.2 which explains the operationalization of the herding behavior variable:

Variabel	Pernyataan	Kode	Skala	Sumber
	The decisions of other investors to buy and sell	HB1		
	shares have an impact on my investment		Interval	Adielyani &Maward
	decisions.			(2020)
HerdingBehavior	A certain number of stocks traded by other	HB2		
	investors influences my investment decisions.			
	The decisions of other investors to see the	HB3	1	
	trading volume of a stock impact my	r		
	investment decisions.			
	I react quickly to changes in other investors	HB4	1	
	decisions.			

Table 2. Operationalization of Herding Behavior Variables

Experienced Regress

According to Yohson (2008) experienced regret is an experience experienced by someone that causes that person to regret or be disappointed in making investment decisions or even accepting the risk of the results of making previous investment decisions.

Table 3. Experienced Regret Variable Operationalization

Variabel	Pernyataan	Kode	Skala	Sumber	
	The bad experience when investing made the correspondents not dare to invest again.	ER1			(2000)
Function and	The experience of being deceived wher investing	ER2	later al	Yohson (2020)	(2008)
Experiencea	Feelings of regret having made an investment.	ER3	Interval		
Regret	Experience suffered enough losses.	ER4			

The dependent variable or what is known as the dependent variable (Y) is a variable that is affected or becomes a result because of the independent variable. This study uses the dependent variable in the form of investment decisions.

Investment decisions are choices made by investors over various investment options to reap more income and gain profits in the future. The following is table 3.4 which explains the operationalization of the Investment Decision variable:

Table 4. Operationalization of Investment Decision Variables

Variabel	Pernyataan	Kode	Skala	Sumber
	I am interested in investments that	at ID1		
Investment	provide high returns.			Utami & Sitanggang
Decision	l invest for sustainable profit.	ID2		(2021); Adiputra,
	I react normally to losses.	ID3		Rahardjo & Hadrian
	The results of my investment decisions a	elD4	Interval	(2020)
	always as expected.			
	I understand how to minimize the risk	inID5		
	investing.			

Data Analysis

The data analysis technique used to answer the problem formulation found in the study used PLS-SEM with the help of Smart PLS software due to a limited sample. In the PLS-SEM analysis there are 3 stages, the first stage is the specification of the model, then the second stage is the evaluation of the outer model and the last stage is the evaluation of the inner model. At the model specification stage, the inner and outer models will be determined to explain the relationship of each indicator with the most appropriate variable concept. In determining the inner and outer models, you must determine the inner model first, then in determining the outer model to pay attention to choosing a multi-item scale or single-item scale.

At the outer model evaluation stage, the reliability and validity of the model will be evaluated. At this stage it also defines and explains the specific relationship between indicators and theoretical concepts whether reflective or formulative. The tests performed on the outer model are as follows:

- i. Convergent validity. The loading factor value on the latent variable with its indicators is expected to be >0.7.
- ii. Discriminant validity. The discriminant validity value by comparing the AVE root value must be greater than the correlation between latent variables, if the value is high then a construct can be said to be unique and able to explain the phenomenon being measured (Sekaran & Bougie, 2016).
- iii. Composite reliability. More than 0.7, the data has high reliability.
- iv. Average Variance Extracted (AVE). Expected AVE value > 0.5.
- v. Cronbach alpha. Expected value >0.6 for all constructs.

At the inner model evaluation stage, there will be an evaluation and the formation of hypotheses from the inner model. In evaluating the inner model there are several things to be tested. The tests carried out on evaluating the inner model are as follows:

- a. The coefficient of determination (R2) which shows the accuracy of the indicator predictions against the theoretical concept, the results of the numbers from the coefficient of determination (R2) can be concluded if it has a greater value than 0.67 then it is categorized as strong, if the value is between 0.67 0.33 it means the level moderate accuracy, if the value is 0.33 2 0.19 then it is categorized as a weak level of accuracy (Chin, 1998).
- b. Path coefficients which describe a negative and positive relationship, where getting closer to -1 means there is a negative relationship and getting closer to +1 means there is a positive relationship between the variable indicators and the theoretical concept. (Hair et. al, 2014).

RESULTS

R-Square Test Results

Analysis of testing the effect of independent latent variables on dependent latent variables using R-Square. The R-Square value gives an idea of the level of accuracy of a prediction model. The following is the result of data processing using SmartPLS 3.0 software. which shows the R-Square value contained in table 5.

Table 5. R-Square Table

	R²
investment decisions	0,842

Source: The results of this research data have been processed with SmartPLS 3.0

Based on the results of processing the R-Square data above, it shows that the value of R-Square on the investment decision variable is at 0.780 which indicates that every time there is a change in the demographic factor variable and overconfidence bias, it will have an impact on the change in the investment decision variable of 84.2% while the remaining 15.8% will be explained by other variables not present in this study. In addition, the R-Square value which shows the number 0.831 indicates that this research can be categorized as research with a strong level of accuracy.

Hypothesis Test Results (Path Coefficient)

In testing the hypothesis, there is a bootstrapping technique that provides hypothetical answers by knowing the direct effect of a variable and informing the level of significance of the hypothesis answer from each independent variable, namely demographic factors and overconfidence bias and the moderating variable, namely the acquisition of information on the dependent variable. namely investment decisions. Testing the hypothesis in this boostrapping technique is indicated by the t-

statistical value and the p-value contained in each variable. The following is Table 4.14 which shows the t-statistic and p-value of this study.

Table 6. Direct Effect Hypothesis Test Table

Variabel	t-statistik	P-value
Herding Behavior → Keputusan Investasi	0,725	***0,216
Experienced Regret → Keputusan Investasi	5,612	***0,000
Overconfidence Bias → Keputusan Investasi	0,302	0,745

Source: The results of this research data have been processed with SmartPLS 3.0

Based on the results of the direct effect data processing above, it shows that the value of the direct effect on the overconfidence bias variable towards the investment decision variable shows a t-statistical value of 0.302 and a p-value of 0.745, so Ha1 is rejected because the t-statistic value is smaller than 1 .96 and the p-value is greater than 0.1 which means it is significant at the 90% confidence level or $\alpha = 10\%$. If an outline is drawn from this conclusion, it can be concluded that overconfidence bias has no influence on investment decisions in general.

Based on the results of the direct effect data processing above, it shows that the value of the direct effect on the Herding Behavior variable on the investment decision variable shows a t-statistic value of 0.725 and a p-value of 0.216, so Ha1 is rejected because the t-statistic value is smaller than 1.96 and the p-value is greater than 0.05 which means that herding behavior has no positive and significant influence on investment decisions.

Based on the results of the direct effect data processing above, it shows that the value of the direct effect on the Experienced Regret variable on the investment decision variable shows a t-statistic value of 2.611 and a p-value of 0.009, so Ha1 is not rejected because the t-statistic value is greater than 1.96 and the p-value is less than 0.01 which means it is significant at the 99% confidence level or $\alpha = 1\%$. If an outline is drawn from this conclusion, it can be concluded that Experienced Regret has a positive and significant influence on investment decisions.

DISCUSSION

Based on the results of processing the R-Square data above, it shows that the value of the R-Square on the investment decision variable at 0.780 indicates that this research can be categorized as research with a strong degree of accuracy.

Based on the results of the data processing above, it shows that overconfidence bias does not have a positive effect on investment decisions. According to Fridana and Asandimitra (2020), the higher a person's sense of overconfidence will make investors tend to trade more often, while a low level of overconfidence will make people more careful in their actions. This is supported by the research of Robin and Angelina (2020) which states that overconfidence has a positive effect on investment decisions. While the results of this study are in line with research conducted by Parveen et. al (2021), Kansal and Singh (2018), and Shah et. al (2018) and Pratiwi and Leon (2019) which show the results of overconfidence bias as an independent variable on investment decisions have no effect on investor decisions.

Herding behavior variable has no significant positive effect on investment decisions. These results indicate that investors tend to receive information and perform good analysis to choose stocks. 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 respondents studied in this study were investors who participated in investments for < 1 year, in this case it is possible that the behavior of novice investors tends not to follow other investors in making investment decisions. This shows that investors in making investment decisions are more likely to pay attention to fundamental information first in making their decisions. This investor behavior can occur due to the availability of information that investors feel is sufficient as a basis for making investment decisions. So that the behavior of investors tends not to just go along with it. The status of novice investors, the majority of whom have an undergraduate education background, allows them to be able to dig up a lot of valid information as a basis for making an investment decision. Coupled with the availability of adequate information. Research by Gozalie and Anastasia (2015) and Setiawan, et al. (2018) revealed that herding has no significant effect on investment decisions. This research is not in line with the research of Setiawan, et al (2018), Luong & Thi Thu Ha, (2011). And Vijaya's research results (2016) explain that the herding factor has a negative influence on investment decisions. These results indicate that investors tend to receive information and perform good analysis to choose stocks. Investors tend to be rational because they are not influenced by other investors and do not follow the noise that occurs in the market.

Experienced regret variable has a significant positive effect on investment decisions. That is, the higher the level of experienced regret a person has, the more courageous in making investment decisions in choosing the type of investment that has a higher risk. This significant result is possible because the respondents' answers in this study for the experienced regret variable in the statement item of the respondent have experience of experiencing losses in investing. Most of the respondents agreed that when they invested, they experienced losses. Someone who has experience a loss can be interpreted as having a bad experience in investing. This shows that the more someone has experience in investing, then that person will also experience losses in investing. As in the descriptive discussion, most of the respondents in this study had quite a long investment experience, so that the respondents in the study had experienced a loss and tended to know the risks and benefits of alternative types of investment. (Putra, 2015) In this study investors who have invested in stocks that have high risk characteristics so that the impact of regret experienced will also be high. Experienced regret behavior will make a person more courageous in investing in higher-risk types of investment, and will calculate the risks that will arise when that person will make an investment decision. So it can be said that someone with high experienced regret will tend to choose the type of investment that has a higher risk, because someone who has experience in making investment decisions (Yohson, 2008). This research is consistent with research conducted by Putra, et al (2015).

CONCLUSION

Based on the results of the research analysis in this study, the following conclusions are drawn, namely: Overconfidence bias has no significant effect on investment decisions. This means that one's overconfidence bias in investing does not have an influence on investment decisions made by investors who have a good level of education and good financial literacy so that their investment decisions are not influenced by overconfidence bias. Herding Behavior has no effect on Investment Decisions of investors on the Indonesia Stock Exchange, Herding Behavior of a person in investing, has no influence on investment decisions made by investors who have a good level of education and good financial literacy so that their investment decisions are not influenced by Herding Behavior, Experienced Regret influences Investment Decisions of investors in the Indonesian Stock Exchange. Someone's Experienced Regret in investing has an influence on investment decisions made by investors who have a good level of education and good financial literacy so that their decisions made by investors who have a good level of education and good financial literacy so that their investment decisions made by investors who have a good level of education and good financial literacy so that their investment decisions are influenced by Experienced Regret.

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