International Journal of Application on Economics and Business (IJAEB)
Volume 1, Issue 1, 2023. ISSN: 2987-1972

The Influence of Risk Perception, Overconfidence, and Herding Behavior on Investment Decision

Rachel Halim[1] Ary Satria Pamungkas[1*]

[1]*Faculty of Economics and Business, Universitas Tarumanagara, West Jakarta - 11470, Indonesia*
[*]*Corresponding author. Email: aryp@fe.untar.ac.id*

Submitted: June 2022, Revised: November 2022, Accepted: February 2023

ABSTRACT
This research aims to determine the influence of risk perception, overconfidence, and herding behavior on investment decision. The population of this research is all stock investors who are domiciled in Riau. The sample was selected using purposive sampling method which amounts to 152 respondents. This research method uses Structural Equation Modeling (SEM) with Smart PLS software version 3.2.9. The purpose of this research is that investors can consider their decisions well before making an investment decision and find out how their psychological factors can affect their investment decision. The result of this research is that there is a positive influence of risk perception, overconfidence, and herding behavior on investment decision.

***Keywords**: Risk perception, overconfidence, herding behavior, investment decision*

1. INTRODUCTION

The past year, the world has been shaken by the Covid-19 virus, which has endangered human health. The emergence of this virus also had a big impact in a number of nation including Indonesia, which had experienced a recession in 2020. As a result, the income of the community and the state is reduced. In addition, people's activities are also reduced. This increases the level of public investment because in addition to slowing business movements, money that is usually used by people for consumption or social activities is used for investment. Especially at this modern time, the development of the digital economy that makes it easier for people to invest. According to KSEI publication, the number of capital market investors in 2020 to June 2021 has increased by more than 1,7 million investors. One of the areas experiencing an increase in stock investors is Riau which increased by more than eight thousand investors as of November 2020, where in the previous year it was only five thousand investors. In investing, every investor certainly wants to get a return or profit. However, in investment there must be something called risk, especially stock investments which even in a matter of seconds can harm investors. This depends in how investors make their investment decisions. Every investor has their own thoughts, their own knowledge, and decisions on investment. The right investment decision will provide maximum return to investors. There are several factors that can impact an investor’s decision to make an investment, particularly psychological concerns. Every investor, there is a desire to make profits and avoid losses. The desire and fear of loss will affect the psychology of an investor which will affect their investment decision. [1] state that generally, investor always tries rationally in making investment decision but over time, psychological factors also affect investors decision in making investment decision. Example, someone who has experienced losses before will be more careful in the future and they will then seek information and learn from their previous mistakes. According to the past research, there are a number of elements that influence investment decision. One of the several factors that can influence a person's investment decisions, is risk perception. Risk perception has influence on investment decisions in a good way according to [2], because individuals with risk perception can increase information about risk and can adjust their rate of return. Overconfidence is another factor that can influence an investor in making their investment decision. According to [3], Investors who have long traded and often get returns tend to believe in their ability to invest. The next factor is herding behavior. [4] stated that investors with herding behavior follow the decisions of other investors due to lack of experience in investing.

2. LITERATURE STUDY

Risk perception is a person's view of a risk even though the risk cannot be ascertained and may differ from the actual one [5]. According to [6], risk perception is a person's perspective on the risks he will face. Risk perception is an investor's beliefs and thoughts about an undesirable event. Investor’s risk perception is a view of the risk they will face when making an investment decision [7]. According to [2], individual perceptions of risk can provide information about risk and adjust the rate of return on the investment. [8] stated that investors make calculations of possible risks that will occur in the future and are confident in their investment decisions. A high perception of risk will increase the investment decisions of investors because the level of courage of investors also increases. Someone who has risk perception has a careful attitude in making a decision and is full of considerations [8]. This is different from the results of [9] which shows that risk perception doesn’t influence investment decisions.

[5] argue that overconfidence is a person's feeling where they are too optimistic and confident about something. According to [10], overconfidence is a person's tendency to prioritize knowledge, abilities, and accuracy. Overconfidence is a behavior in which an investor has confidence in the chosen investment decision [11] According to [3], overconfidence affects all sorts of investors, but it is most prevalent among those who have made huge profit in the past or have been trading for such a long time, leading them to believe their abilities. [6] found that overconfidence has a positive influence on investment decision in their research. Due to their extensive knowledge and experience in managing their finance, investors often have overconfidence. [12] stated that analysis, study, and research are required before making an investment decision is a must that must be done by investors because luck is not something that investors can rely on. This result is different from the result of [13], which show that overconfidence has no impact on investment decisions. According to the results of this research indicate that investors who show overconfidence, the accuracy of their investment decisions will be lower.

Investors imitate the decisions of other investors while making investment decision, is known as herding behavior [14]. According to [15], herding behavior is a decision making, where investors often follow the actions or decisions of other investors. According to [11], herding behavior refers to decisions taken from a group and not from investors themselves because of limited time and analysis so that investors follow the decisions of the group. [14] states that investors choose to follow the decisions of other investors and collect information related to stocks such as whether the market is experiencing an increase or a decline**.** Research results from [4] shows that there is a positive effect herd on investment decisions. [4] argues that herd supported by the ability of investors to collect accurate data and information. In contrast to the research results of [15], which shows that herding behavior does not affect investment decision, which means that in making investment decisions, investors do not follow the decisions of other investors.

According to [7], investment decisions are decisions or policies to invest in assets or allocate funds in the form of investments that generate profits in the future. Investment decisions can be interpreted as the type of investment decisions taken by an investor or how investors allocate their money into investment forms that can be profitable for them. Investment decision is a decision made by an investor on when, how, where, and how much funds will be invested in financial products or instruments with the aim of earning income or increasing the value of their money [16]. [8] argue that the investment decision is a choice that will be chosen in collecting more income from an asset or more in the hopes of receiving a useful return later. Investment decision according to [5], is a person's process of making choices by finding, setting goals, and evaluating information related to alternative investment instruments.

Based on the definition and description of the relationship between the variables above, the following is the research model that was used in this research:

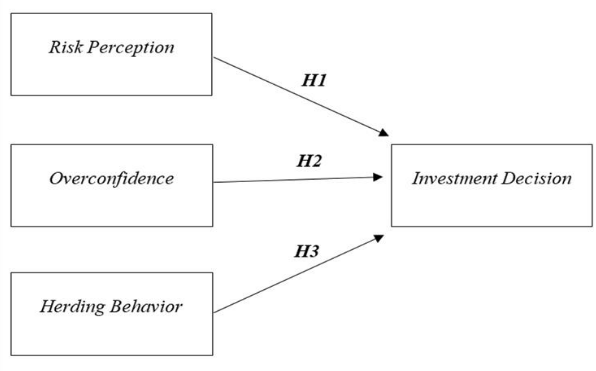

Figure 1 Research Model

Hypothesis:
H1: There is an positive influence of risk perception on investment decision.
H2: There is an positif influence of overconfidence on investment decision.
H3: There is an positif influence of herding behavior on investment decision.

3. METHODOLOGY

Descriptive research design and cross-sectional data collection is used in this research. The participants in this research were all Riau-based stock investors and the purposive sampling was used in this research as a sample technique. The criteria for selecting the sample used in this research are people who are over 18 years old, people who have invested in stocks, people who have income, and people who are domiciled in Riau. The questionnaires were distributed online via Google Form and distributed to potential respondents via social media. The number of data that was collected and complied with the predetermined criteria was 152 respondents, of which 84 were women and 70 were men. The majority of respondents in this research were aged 18-25 years and the majority had the last education of senior high school or vocational high school. The majority of respondents have a monthly income of around Rp 5,000,000 – Rp 9,999,999 and the majority work as private employees. Data analysis technique in this research used SmartPLS version 3.2.9 software with Structural Equation Modeling (SEM) data analysis techniques. According to [17], the hypothesis is not rejected if the t-statistic value is above 1.96 and the p-value is below 0.05 [18]. The type of scale used in this research is a five-point Likert Scale where 1 indicates "Strongly Disagree", 2 means "Disagree", 3 means "Neutral", 4 means "Agree" and 5 means "Strongly Agree".

Risk perception is an investor's assessment of the risk that may be encountered when making an investment decision, where the risk perception of each individual depends on the psychology of individual itself which will later affect their investment decision. Investors with a high risk perception will be more cautious while making investment decision. Below are indicators that used to measuring risk perception as displayed in Table 1.

Table 1 Risk Perception

Variable	Indicators
Risk Perception	The more familiar an investment, the less risky it is.
	The higher yield or rate of return of investments, the greater the risk
	I'm more careful and avoid all risky investment
	A diversified portfolio reduces risk

Source: [16]

Overconfidence is the attitude if someone who believes their own abilities and knowledge. Investor with overconfidence have knowledge, information, and previous experiences so they are more courageous in making investment decision. Below are indicators that used to measuring overconfidence as displayed in Table 2.

Table 2 Overconfidence

Variable	Indicators
Overconfidence	I believe that my skills and knowledge about stock market can help me outperform the market
	I feel that I have enough ability to manage the investments in my favor
	I feel that I am always lucky to invest in the best deals
	I feel that I have enough experienced to predict the profitable investments
	I feel that I have control over the investment returns flows

Source: [21]

Investors that engage in herding behavior follow the decisions of other investors while making investment decisions. Investors with herding behavior seek information from other investors and consider the information before making a decision. Below are indicators that used to measuring herding behavior as displayed in Table 3.

Table 3 Herding Behavior

Variable	Indicators
Herding Behavior	Other investors' decisions in choosing certain stock for traded affect my investment decision.
	Other investors' decision to buy and sell stock affect my investment decision.
	Other investors' decision about stock volume affect my investment decisions
	I react quickly to other investors' changes in investors' decisions.

Source: [14]

Investment decision is a decision chosen by an investor by investing in an asset or financial instrument and hoping that this decision can provide more returns in the future. Below are indicators that used to measuring investment decision as displayed in Table 4.

Table 4 Investment Decision

Variable	Indicators
Investment Decision	My investment decisions support my investment goals.
	My reaction to losses is normal
	I usually get what I expect from my investment decisions.
	I have a risk tolerance for my investment decision
	I hold investment in the long term

Source: [19]

4. RESULTS

4.1. Validity and Reliability Test Result

Convergent validity in this research are declared valid as indicated by the Average Variance Extracted (AVE) which is above 0.5 [18], and the loadings factor are declared valid because each of the indicator is above 0.7. Also because the Fornell-Larcker criterion and cross loadings value of the chosen variable is higher than the other variables, the discriminant validity results are also declared valid. The reliability test results show that the data used in the research is reliable because the value of composite reliability is higher than 0.7 and the value of Cronbach's alpha is higher than 0.6 [18]. This means that the validity and reliability test on this research is accepted.

4.2. Coefficient of Determination (R^2)

This research result based on the result of R^2 is 0,632. This means that risk perception, overconfidence and herding behavior can explain investment decision as 63,2%. Meanwhile the remaining 36,8% can be explained by other variables.

4.3. Effect Size (f^2)

Based on the effect size test, it shows that the f^2 value of risk perception, overconfidence, and herding behavior is 0,198, 0,105, 0,163. This shows that risk perception and herding behavior has moderate effect and overconfidence has a small effect on investment decision.

4.4. Predictive Relevance (Q^2)

This predictive relevance test shows that the value of Q^2 is 0,350 which means this variable has a predictive relevance because the value is above zero.

4.5. Path Coefficient

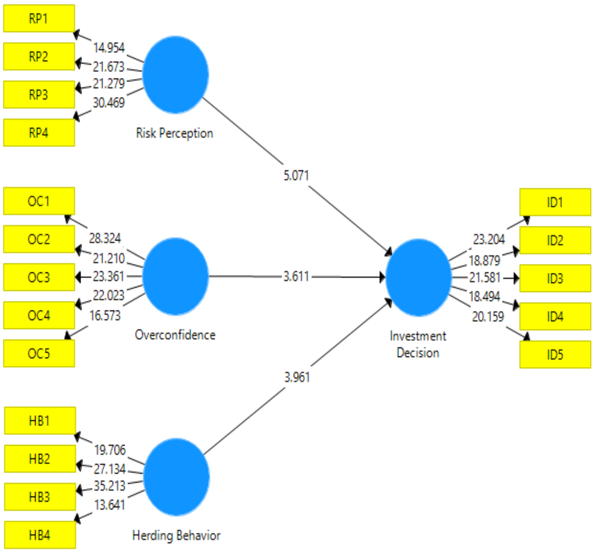

Figure 2 Bootstrapping Test Results

Based on the picture above, showing that all of the variables in this research has a positive path coefficient. It signifies that the stronger the independent variable's influence on the dependent variable, the larger the path coefficient.

4.6. Goodness of Fit (GoF)

The result of goodness of fit is 0,6158, which is included in the large category. This means that this research model has a good level of suitability and compatibility.

4.7. Hypothesis Test

The following are the result of hypothesis test.

Table 5 Hypothesis Test

Hypothesis	Original Sample	t-*statistic*	*p-value*
RP -> ID	0.363	5.071	0.000
OC -> ID	0.266	3.611	0.000
HB -> ID	0.310	3.961	0.000

Based on the results of hypothesis test above, it can be seen that H1 is not rejected. From these results, it can be stated that variable risk perception has an influence on investment decision in a positive way. It is because the value of t-statistic is above 1,96 and the *p-value* is below 0,000. The results of this research are in line with the results of research from [2] and [8] which show that risk perception has a positive influence on investment decisions. Risk perception has a positive influence on investment decision according to the results of [6] research. According to [6], investors who have risk perception will take an investment decision with full consideration and not rashly. Investors with a good risk perception will know their respective risk levels so that in making an investment decision, they will consider their options and decisions first.

H2 is not rejected based on the hypothesis testing results because t-statistic value is above 1,96 and the *p-value* is below 0,000. We can take that variable overconfidence has influence towards investment decision as a conclusion. An investor with overconfidence believes in their abilities, knowledge, and experience in making investment decisions and has considered those decisions. The results of this research are in line with the results of research from [6], [3], and [14] which show that overconfidence an influence on investment decisions in a positive ways. Investors who have traded for a long time or often get previous returns tend to believe in their ability to invest [3]. An investor with overconfidence believes in his abilities, knowledge, and experience in making investment decisions. Because of their knowledge and experience, investors believe that the decisions they take will result in returns or profits in the future.

Then, based on the results of hypothesis test above, it is determined that H3 is not rejected. We can take that variable herding behavior has influence towards investment decision as a conclusion. It is because the value of t-statistic is above 1,96 and the *p-value* is below 0,000. An investor will follow the behavior of other investor if they consider the information and knowledge they have is limited. With the information obtained, investor can consider their investment decisions well so that the results obtained will be better. The findings of this research's results agree with the results of research from [14] which shows that herding behavior influence investment decision in a positive way. [14] found that people with herding behavior prefer to follow other investors and depend on the information they provide that has been collected compared to the information they have and assume that this behavior can provide useful information for them. An investor who has experienced previous losses will choose to follow the information and decisions of others with the aim of getting good results. The findings of this research are similarly with [4] results, which show that herding behavior influences investment decision in a positive way, where investors follow what other investors do because of their lack of experience in investing.

5. CONCLUSIONS AND SUGGESTIONS

5.1. Conclusions

The conclusion of this research based on the result of data analysis and discussion can be concluded that risk perception has a positive influence on investment decision; overconfidence has a positive influence on investment decision; and herding behavior has a positive influence on investment decision.

5.2. Suggestions

Based on these results, in order to make an investment choice, some fundamental and technical analysis is required with the aim of getting good results. Investors are also expected to pay attention to information and news related to the shares owned to find out the state of the market and how it is moving. In addition, for the further research that using the same research topic can use more of independent variables such as financial literacy, availability bias, self-monitoring, representativeness, risk tolerance, and others. Further researchers can also increase the number of research respondents to get representative results.

REFERENCES

[1] Budiarto, Susanti, 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), *J. Ilmu Manaj.*, vol. 5, no. 2, 2017, pp. 1–9.

[2] R. E. H. Saputro, D. Lestari, Effect of financial literacy and risk perception on student investment decisions in Jakarta, *Rev. Manag. Entrep.*, vol. 3, no. 2, 2019, pp. 107–132. doi: 10.37715/rme.v3i2.1237.

[3] R. Robin, V. Angelina, Analysis of the impact of anchoring, herding bias, overconfidence and ethical consideration towards investment decision, *JIMFE (Jurnal Ilm. Manaj. Fak. Ekon.*, vol.

6, no. 2, 2020, pp. 253–264. doi: 10.34203/jimfe.v6i2.2558.

[4] A. O. Pratama, K. Purba, J. Jamhur, P. B. Tri Prasetyo, Pengaruh faktor perilaku investor saham terhadap keputusan investasi di Bursa Efek Indonesia, *Monet. - J. Akunt. dan Keuang.*, vol. 7, no. 2, 2020, pp. 170–179. doi: 10.31294/moneter.v7i2.8659.

[5] N. S. N. Ainia, L. Lutfi, The influence of risk perception, risk tolerance, overconfidence, and loss aversion towards investment decision making, *J. Econ. Bus. Account. Ventur.*, vol. 21, no. 3, 2019, p. 401. doi: 10.14414/jebav.v21i3.1663.

[6] I. O. Fridana, N. Asandimitra, Analisis faktor yang memengaruhi keputusan investasi (studi pada mahasiswi di Surabaya), *J. Muara Ilmu Ekon. dan Bisnis*, vol. 4, no. 2, 2020, p. 396. doi: 10.24912/jmieb.v4i2.8729.

[7] D. A. Wulandari, R. Iramani, Studi experienced regret , risk tolerance , overconfidance, *J. Bus. Bank.*, vol. 4, no. 1, 2014, pp. 55–66.

[8] V. Novianggie, N. Asandimitra, The influence of behavioral bias, cognitive bias, and emotional bias on investment decision for college students with financial literacy as the moderating variable, *Int. J. Acad. Res. Accounting, Financ. Manag. Sci.*, vol. 9, no. 2, 2019, pp. 92–107. doi: 10.6007/IJARAFMS/v9-i2/6044.

[9] E. Pradikasari, Y. Isbanah, Pengaruh financial literacy, illussion of control dan risk perception terhadap keputusan investasi di Surabaya, *J. Ilmu Manaj.*, vol. 6, no. Vol 6, No 4, 2018, pp. 424–434.

[10] N. Yulianis, E. Sulistyowati, Impact of financial literacy and risk tolerance on investment decision, *Int. J. Manag. Humanit.*, vol. 4, no. 1, 2021, pp. 61–71. doi: 10.35940/ijmh.k1059.0741120.

[11] J. Novianto, R. Robin, Investor’s behavior and stock investment decision in Batam city,” *Akuntabel*, vol. 18, no. 3, 2021, pp. 532–542. [Online]. Available: https://journal.feb.unmul.ac.id/index.php/AKUNTABEL/article/view/10029.

[12] I. G. Adiputra, T. H. Rahardjo, Hadrian, Analysis of investment decision making through overconfidence, herding effect, and self-monitoring variable during the covid-19 pandemic in Indonesia, *Proc. Ninth Int. Conf. Entrep. Bus. Manag. (ICEBM 2020)*, vol. 174, 2021, pp. 184–190. doi: 10.2991/aebmr.k.210507.028.

[13] M. Rahman, S. S. Gan, “Generation Y investment decision: an analysis using behavioural factors,” *Manag. Financ.*, vol. 46, no. 8, 2020, pp. 1023–1041. doi: 10.1108/MF-10-2018-0534.

[14] D. Adielyani, W. Mawardi, “The influence of overconfidence, herding behavior, and risk tolerance on stock investment decisions: the empirical study of millennial investors in Semarang City,” *J. Maksipreneur Manajemen, Koperasi, dan Entrep.*, vol. 10, no. 1, 2020, p. 89. doi: 10.30588/jmp.v10i1.691.

[15] E. Pranyoto, Susanti, Septiyani, “Herding behavior, experienced regret dan keputusan investasi pada bitcoin,” *J. Bisnis Darmajaya*, vol. 6, no. 1, 2020, pp. 29–43.

[16] K. Sindhu, R. Kumar, “Influence of risk perception of investors on investment decisions: an empirical analysis,” *Int. J. Res. Econ. Soc. Sci.*, vol. 2, no. 5, 2014, pp. 15–25. [Online]. Available: www.iosrjournals.org.

[17] J. F. Hair, J. J. Risher, M. Sarstedt, C. M. Ringle, “When to use and how to report the results of PLS-SEM,” *Eur. Bus. Rev.*, vol. 31, no. 1, 2019, pp. 2–24. doi: 10.1108/EBR-11-2018-0203.

[18] J. F. Hair, M. Sarstedt, L. Hopkins, and V. G. Kuppelwieser, “Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research,” *Eur. Bus. Rev.*, vol. 26, no. 2, 2014, pp. 106–121. doi: 10.1108/EBR-10-2013-0128.

[19] Kourtidis, D., Servic, Z., Chatzoglou, P., Investors’ trading activity: a behavioural perspective and empirical results. The Journal of Socio-Economics, 40(5), 2011, pp. 548-557.

[20] KSEI, *Statistik Pasar Modal Indonesia.* Ksei.co.id. 2021, [Online], Available: https://www.ksei.co.id/files/Statistik_Publik-Juni_2021.pdf

[21] Mumaraki, J. N., Nasieku, T. Effect of overconfidence on individual investment decision: evidence from the investment services sector in Kenya. the International Journal of Business & Management, 4(10), 2016, pp. 254-261.