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Determinant Factors of Herding Behavior and Financial Literacy on Investment Decision and Risk Tolerance as Mediator Factor

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Abstract

The key objective of this research paper is to estimate the impact of herding behavior and financial literacy on investment decisions by using risk tolerance as a mediator variable among the investors of the stock market in the Indonesia Stock Exchange (ISE). The study collected 50 sample responses from the Indonesia Stock Exchange (ISE) investors using a five-point Likert scale questionnaire. The study has employed PLS-SEM for data analysis using Smart PLS version 3.2.9. The results of this study reveal the role of herding behavior and financial literacy on investment decisions. The findings signify that herding behavior can increase investment decisions. However, our study shows that having financial literacy cannot increase investment decisions. The results suggest that risk tolerance partially mediates the relationships between the herding behavior on investment decisions. However, the result also shows that risk tolerance fully mediates the relationship between financial literacy on investment decisions. This study supports the behavioral finance theory of the direct and indirect effects that lead to investment decisions in the Indonesia Stock Exchange (ISE). These findings can guide investors in making investment decisions to avoid irrational behavior and provide practical guidelines for investing in the capital market so that they always pay attention to the movement of the IDX Composite.

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1. Introduction

Inefficient markets can occur due to herding behavior. This is certainly not expected by investors because it can cause the function of the efficient market to become unbalanced and result in the emergence of bubbles and cause chaos in stock prices. If herding behavior occurs, the price listed on the market does not reflect its fundamental value, and in the end, a return reversal will occur (Choi & Sias, 2009). According to (Chen et al., 2020), even though the market portfolio returns increase, if herding occurs, the spread of stock returns will decrease study in the light of current knowledge on the subject. State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results. According to (Bikhchandani & Sharma, 2000), market volatility can increase if irrational behavior occurs in investment decisions.

The existence of knowledge about investment and finance or often referred to as financial literacy, will make investment decisions taken better. Financial literacy is important for every individual to anticipate financial problems in the future. According to (Pradikasari & Isbanah, 2018), individuals with a high level of literacy will usually act wiser and be brave in making high-risk investment decisions. On November 2019, the National Financial Literacy Survey (SNLIK) was conducted for the third time by the Financial Services Authority (OJK), with the results of the national financial literacy index reaching 38.03%. This index shows that for every 100 people, only 38 residents fall into the well-literate category (understanding financial literacy well). However, compared to the results of the OJK survey 2016, this figure has increased from the financial literacy index of 29.7%. It can be seen that in the last three years, there has been an increase in the financial literacy index of the Indonesian population by 8.33%.

An investor must understand the concept of investment, which is the basis for making decisions (Pratiwi et al., 2016). Understanding the relationship between the expected return and the risk of an investment is fundamental to the concept of investment. Risk (risk) and expected rate of return (return) are two things that must be considered in making investment decisions. To get a high rate of return, investors must also be prepared to face even higher risks because risk and return are two things that cannot be separated and are unidirectional (linear). Therefore, investors have a small possibility of generating a high rate of return with a low level of risk.

Based on previous research on the relationship between herding behavior and investment decisions, the results could be more consistent; namely, herding behavior significantly affects investment decisions. In contrast to previous studies that have shown significant results, several other studies have shown that herding behavior does not affect investment decisions. Some of these studies include. Previous research has several results on the relationship between financial literacy and different investment decisions. Financial literacy has a significant effect on investment decisions. In contrast to the results of these previous studies, it is known that financial literacy has no significant effect on investment decisions.

Based on the differences in research results between the relationship between herding behavior and financial literacy variables on investment decision variables. This research is interesting because researchers will examine and analyze the influence of herding behavior and financial literacy directly and indirectly directly to investment decisions mediated by risk tolerance. The results of this study are expected to be useful in developing insights into financial management, especially on the factors that affect investment decision influence of herding behavior and financial literacy with Risk tolerance as a mediating factor. Investors can use the results of this study as one consideration for investment decisions by seeing the herding biases and financial literacy factors.

2. Materials and Methods

This study uses quantitative research to test the hypothesis. This study examines the influence between variables through hypothesis testing. This study examines the impact of herding behavior and financial literacy on investment decisions and the effect of risk tolerance in mediating the impact of herding behavior and financial literacy on investment decisions. The population of this study is students who are members of the LAB IPM FEB UB. This study uses primary and secondary data obtained through data collected or published by researchers or other institutions. Questionnaires are used to obtain primary data, while documentation data collection techniques obtain secondary data. Documentation is data that is carried out by tracing information related to variables from notes, books, magazines, journals, and websites regarding relevant topics to obtain data and literature that can support this research. The author chose the Likert scale as the measurement scale for this study. The Likert scale is used to know the extent to which respondents give their opinions according to a predetermined scale. Data analysis included descriptive statistical tests, PLS analysis, and hypothesis testing.

3. Results and Discussions

Direct Effect Test Results

The relationship of a variable is significant if the significance value is smaller than 0.05. The results of the test analysis can be seen immediately in Tables 1 and 2: Table 1

Table 1
Summary of the Result of the Significance of Investment Decision

Variable	Path Coefficient	T	P Value	Information
Herding Behavior (+)	0,75	3,893	0,000	Significant
Financial Literacy	-0,126	0,699	0,485	Not significant
Risk Tolerance (+)	0,386	3,225	0,001	Significant
R Square (0,920)				

Source: Processed Data (2023)

The path coefficient of herding behavior is 0.75 with a significance of 0.000, which indicates a positive influence, meaning that the higher the herding behavior, the higher the investment decision. The financial literacy coefficient is -0.126 with a significance of 0.485, which means it does not affect investment decisions. The coefficient of the risk tolerance path is 0.386, with a significance indicating a positive influence, meaning that the higher the risk tolerance, the higher the investment decision. Based on Table 1, the R square value is 0.920; herding behavior, financial literacy, and risk tolerance of 92% explain the investment decision variable. At the same time, the remaining 8% is influenced by variables outside the independent variables studied.

Table 2
Summary of the Result of the Significance of Risk Tolerance

Variable	Path Coefficient	T	P Value	Information
Herding Behavior (-)	0,568	2,520	0,012	Significant
Financial Literacy (+)	1,430	6,299	0,001	Significant
R Square (0,823)				

Source: Processed Data (2023)

The path coefficient of herding behavior is -0.568 with a significance of 0.012, which means a negative effect on risk tolerance, meaning that the higher the herding behavior, the lower the individual's risk tolerance. The financial literacy path coefficient is 1.430, with a significance of 0.001, indicating a positive influence, meaning that the higher the financial literacy, the higher the risk tolerance. Based on Table 2, the R square value is 0.823; the risk tolerance variable can be explained by the herding behavior variable and financial literacy of 82.3%. While variables outside the independent variables studied, influence the remaining 17.7%.

Indirect Effect Test Results

Testing the indirect effect is one variable to another through an intermediary called the mediating variable. The results of the indirect effect test analysis are presented in Table 3.

Table 3
Summary of Test Results for Risk Tolerance Mediation

Variable	Path Coefficient	T	P Value	Information
Herding Behavior Mediation	-0,126	2,275	0,027	Partial
Financial Literacy Mediation	0,552	3,960	0,000	Full
R Square (0,823)				

Source: Processed Data (2023)

The role of mediating risk tolerance between herding behavior and investment decisions is partial mediation because, without a risk tolerance mediating variable, herding behavior still significantly influences investment decisions. Thus the risk tolerance in this study is expressed as partial mediation. The mediating role of risk tolerance between financial literacy and investment decisions is stated as perfect mediation because the relationship between financial literacy and risk tolerance has a significant coefficient value, and risk tolerance on investment decisions also has a significant coefficient value. However, financial literacy on investment decisions has an insignificant coefficient value, so risk tolerance is expressed as perfect or full mediation.

The Effect of Herding Behavior on Investment Decisions

The results of this study state that herding behavior has a significant and positive effect on investment decisions. This shows that the higher the level of herding behavior owned by a person, the higher the possibility for someone to make an investment decision. The results of this study show that investors have high herding behavior in their investment decisions. Investors take actions based on herding behavior by considering the decisions of other investors in buying and selling shares, the number of certain shares traded by other investors, the decisions of other investors in observing the volume of stock trading and changes in share prices, the decisions of other investors regarding the shares traded by other investors. The type of shares chosen by other investors, and the volume of shares traded on the capital market

The Effect of Financial Literacy on Investment Decisions

The results of this study state that financial literacy has no significant effect on investment decisions, and H2 is rejected. This does not follow classical finance theory, which states that an investor has a rational attitude, which can be reflected in making investment decisions based on financial literacy.

The results of this study are contrary to classical finance theory; this research is supported by the results of (Pradhana, 2018), which states that the cause of the financial literacy variable does not affect investment decisions because the majority of respondents are still 21 years old, where this age is still classified as a student and also not yet working so still not thinking about future finances and unable to manage personal finances better. The results of this study are also in line with the results of (Pradikasari & Isbanah, 2018) research, which states that financial literacy among students in Surabaya does not affect their investment decisions. This is because respondents feel there is no need to use knowledge in making investment decisions. Another result that supports the results of this study is which states that financial literacy has no significant effect on investment decisions.

Effect of Herding Behavior on Risk Tolerance

The results showed that herding behavior significantly negatively affected risk tolerance. This means investors with high herding behavior will take lower risks or be intolerant when making investment decisions. This study's results follow the concept developed that individuals in stressful and ambiguous situations seek safety by following their peers and that this tendency is most pronounced for individuals who are generally less tolerant of risk. This study's results also follow several previous studies, such as those conducted by showing a significant impact of the relationship between herding behavior and risk tolerance. Investors with herding behavior will generally follow most people's choices and choose safer investment instruments. In addition, based on research results from Sushma (2023), it is known that herding behavior is negatively related to financial risk tolerance among individuals.

Effect of Financial Literacy on Risk Tolerance

Financial literacy significantly and positively affects risk tolerance, and H4 is accepted. These results suggest that investors with good financial literacy skills are more willing to take risks in making investment decisions, so they have higher risk tolerance. This study's results align with the

prospect theory put forward by (Kahneman & Tversky, 1979). Prospect theory explains how a person (investor) makes a decision under certain risk conditions or chooses between two risk options under conditions of uncertainty. (Grable, 2000) explain that financial literacy can be used statistically as a significant predictor of risk tolerance. In predicting risk tolerance, financial literacy is the most important factor to be included in the risk tolerance model, which results in demographic factors needing to be more effective (Grable, 2000). Financially savvy individuals exhibit more risk-tolerant behavior and invest in risky assets to a greater extent than individuals with lower financial literacy; (Burns et al., 2000)

This research is supported by several previous studies, such as those conducted by (Purnamasari, Mohd., Mohd. Sabri, & Amiruddin, 2016) and (Awais et al., 2016). The results of this study are also consistent with research in Pakistan conducted by (Ghaffar & Sharif, 2016), who argue that due to very low financial literacy in Pakistan, PSX investors are unable to manage risk effectively.

Risk Tolerance mediates the relationship between Herding Behavior and Investment Decisions.

The results show that herding behavior has an important influence on investment decisions through risk tolerance. The mediation of this risk tolerance is partially known so that risk tolerance can bridge the influence of herding behavior on investment decisions. However, without risk tolerance, herding behavior can increase investment decisions. This means that investors in this study will follow most people's choices in making investment decisions because they are considered safer. The level of one's risk tolerance affects the level of uncertainty that an investor can accept. So if a person has a high herding behavior tendency, he will take fewer risks or be intolerant when making investment decisions. Some investors are conservative by providing very small risk tolerance to get relatively small returns. However, some investors dare to take risks by providing large loss tolerances and risking all their wealth to get large returns. Also, investors with a high-risk tolerance tend to choose investments with a high risk, such as stocks.

The results of this study are consistent with the prospect theory, which explains how a person (investor) makes decisions under certain risk conditions or chooses between two risk options under conditions of uncertainty. In addition, the results of this study are also supported by several previous studies, such as those conducted showing a significant impact of the relationship between herding behavior on tolerance risk. Research from (Ayu et al., 2014) concluded that risk tolerance positively affects investment decisions. Another study conducted by Pradikasari & Isbanah (2018) also found that risk tolerance positively affects investment decision-making.

Risk Tolerance mediates the relationship between Financial Literacy and Investment Decisions.

The study results show that risk tolerance can mediate the relationship between financial literacy and investment decisions. The mediation of risk tolerance in this study is known as full mediation, so it can be interpreted that risk tolerance perfectly bridges the relationship between financial literacy and investment decisions. In this study, financial literacy can only influence investors' investment decisions if it is bridged by risk tolerance. Increasing financial literacy can improve investment decisions for respondents if risk tolerance for investors also increases.

This study's results also reflect prospect theory's implications, which can be used to explain the risk tolerance variable. Risk tolerance can be explained through prospect theory, which explains how individuals behave when facing risky and uncertain situations. In prospect theory, it explains the types of investors who are divided into risk takers and risk aversions. A risk taker is a type of investor who dares to take more risks or can be said to be a risk taker. On the other hand, risk aversion is an investor who stays away from risk or does not like risk.

The results of this study are supported by several previous studies, such as Zaheer Ahmed, Umara Noreen, Suresh A.L. Ramakhrisnan, Dewi Fariza Binti Abdullah, Haseeb Waheed, Zeeshan Ahmed, Qasim Saleem, Sajid Mohy Ul Din, and Bilal Ahmed (2020), Zaheer Ahmed, Suresh Ramakrishnan, and Umara Noreen, Mustabsar Awais, M. Fahad Laber, Nilofer Rasheed, Aisha Khursheed which states that risk tolerance can mediate the relationship between financial literacy and investment decisions.

Effect of Risk Tolerance on Investment Decisions

The study results show that the relationship between risk tolerance and investment decisions has a positive and significant effect. This shows that the higher the level of risk tolerance a person has, the higher the level of investment decisions made. The results of this study indicate that investors who are members of the FEB UB IPM Lab who invest in stocks have a high level of tolerance for risk in making investment decisions. An investor with a high tolerance level will be more courageous in making decisions than an investor with a low tolerance level. Student investors who are members of the FEB UB IPM Lab who invest in stocks prefer high-risk investments to get higher profits and believe that every risky investment does not always experience a loss. By making investment decisions with a high level of risk, one can get bigger profits and the possibility of experiencing big losses.

The results of this study also reflect the implications of the prospect theory put forward by (Gilovic et al., 1974) to explain the risk tolerance variable. Risk tolerance can be explained through prospect theory, which explains how individuals behave when facing risky and uncertain situations. In prospect theory, it explains the types of investors who are divided into risk takers and risk aversions. A risk taker is a type of investor who dares to take more risks or can be said to be a risk taker. On the other hand, risk aversion is an investor who stays away from risk or does not like risk.

The results of this study are in line with the research of (Budiarto & Susanti, 2017; Pradikasari & Isbanah, 2018) (Anggraeni & Puspita, 2021), which proves that risk tolerance has an effect on investment decisions and is contrary to research by (Ady & Utami, 2017) showing that risk tolerance does not affect investment decisions.

4. Conclusion

This study examines the influence of herding behavior and financial literacy variables on investment decisions. It examines risk tolerance in mediating the influence of herding behavior and financial literacy on investment decisions. For members of the IPM FEB UB LAB, it is recommended to frequently participate in activities held by the laboratory and increase confidence in utilizing their knowledge in making investment decisions. In addition, the literacy gained can be used to manage risk according to the investment risk profile of each investor.

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