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The Effect of Heuristics, Herding Behavior, and Financial Literacy on Investment Decisions

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Abstract:
This study aims to determine the effects of heuristics, herding behavior, and financial literacy on investment decisions. This study is quantitative research. The data were collected by online questionnaire in Google Forms. The sample in this study amounted to 100 respondents who were selected using a purposive sampling method (non-probability sampling) and analyzed using the Structural Equation Model (SEM) with a Partial Least Square (PLS) measurement tool. The results of this study indicate that heuristics, herding behavior, and financial literacy have positive effects on investment decisions.

Keywords: heuristics, herding behavior, financial literacy, investment decisions.

启发式、从众行为和金融知识对投资决策的影响

摘要：
本研究旨在确定启发式、羊群行为和金融知识对投资决策的影响。本研究为定量研究。这些数据是通过谷歌表单中的在线问卷收集的。本研究中的样本为100名受访者，他们使用有目的的抽样方法（非概率抽样）选择，并使用带有偏最小二乘（PLS）测量工具的结构方程模型（扫描电镜）进行分析。这项研究的结果表明，启发式、羊群行为和金融知识对投资决策有积极影响。

关键词：启发式、羊群行为、金融知识、投资决策。

1. Introduction

Investment is a commitment to several funds or other resources made at this time to obtain several benefits in the future (Tandelilin, 2010). Three prospect theory indicators can measure investment decisions: regret aversion, loss aversion, and mental accounting (Waweru et al., 2008). The three indicators are used to measure their impact on investment decisions made by investors.

In addition to the three factors above, a theory of financial behavior also discusses psychological factors that influence investment decision-making (Luong & Ha, 2011). One of them is heuristics and herding behavior. Heuristics are practical instructions to facilitate information processing and speed up individuals' decisions. Herding behavior is one approach that is used to determine investor behavior, where investors tend to follow the decisions of others in making investment decisions (Wijaya & Zunairoh, 2021).

Examples of cases of investor behavior that are influenced by psychological factors are the case of Garuda Indonesia airline financial statements, which are considered detrimental to investors. From this case, it can be concluded that Garuda Indonesia's financial statements were manipulated, thus showing its beautiful financial condition and increasing profits. This condition can be detrimental to investors because they often use only practical instructions such as media reports. Hence, investors tend to panic in making investment decisions without learning more information.

In addition to heuristic factors, investment decisions are also influenced by other psychological factors, namely herding behavior, where investors tend to follow and react quickly to the investment decisions of other investors. Examples of cases that reflect investor behavior influenced by herding behavior are those in Ancok's (2007) study; Kurniawan (2019) mentions the case of Black Thursday (September 11, 1986) in the USA; the Dow Jones Industrial Average fell by 22.6%. The study stated that only three out of 115 people were asked why they sold their stocks for economic reasons. The rest sold their stocks, following others.

Other factors, namely financial literacy, can also influence investment decisions because these factors are fundamental factors required in successful financial management. One case of financial literacy is the case of fake investment in the procurement of sugar, which offers a profit of up to 12% of the total investment. The loss borne by the victim of this fake investment reached Rp. 15.6 billion. Another case is the MeMiles fake investment case operated by PT Kam and Kam for eight months, with a turnover of 750 billion. This case is detrimental to 264 thousand members who have joined the investment.

Previous research identified about measured a person's determinability factor in investment decision making (Luong & Ha, 2011), while this study did not only use the factor of exercise alone to measure its effect on investment decision making. Nevertheless, financial literacy factors are used to measure their effect on each individual's investment decision-making. Financial literacy has a positive effect on investment decisions. The higher the level of financial literacy of investors, the better investment decisions they make.

The rise of fake investment cases is one of them caused by the low financial literacy of the public regarding understanding and proper financial management. The lure of high returns from an investment makes people tempted and makes wrong investment decisions. Financial literacy is critical in investment because the higher the level of financial literacy that investors have, the better investment decisions are taken.

From this case, it can be seen that investment decisions can be influenced by several psychological factors and how their investment decisions are different. Besides, a fundamental factor influencing investors' investment decisions is the level of investor financial literacy. Therefore, researchers are interested in further studying how psychological factors and financial literacy influence investment decision-making.

In this study, the researchers formulated several hypotheses that could be tested:

H1: There is a positive effect of heuristics on investment decisions;

H2: There is a positive effect of herding behavior on investment decisions;

H3: There is a positive effect of financial literacy on investment decisions.

Based on the theoretical basis and relevant research results, in order to facilitate understanding of the main problems, the research framework can be presented in the following paradigms:

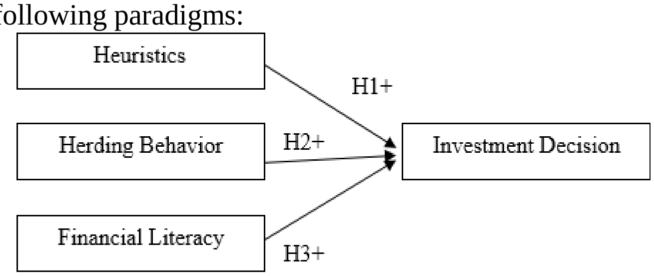

Figure 1. The research framework

2. Literature Review

2.1. Investment Decisions

Investment is a commitment to several funds or other resources made at this time, intending to obtain several benefits in the future (Tandelilin, 2010). Investment decisions, in this case, rely on estimates of the prospects of investment instruments but are based on relevant information through a complex analysis process and include analysis of various factors. In making investment decisions, psychological factors become factors that play the most significant role and determine the investment. Psychological factors in investment decision-making here are measured using prospect theory.

In this study, three indicators of prospect theory (regret aversion, loss aversion, and mental accounting) are used to measure the impact on investment decisions of individual investors.

Manurung (2006) states that investors are often confused if they want to invest in funds owned. Investor confusion is caused by the absence of information sources that describe investment instruments. It is difficult for investors to make investment decisions from the confusion itself. The following is called behavioral finance (Luong & Ha, 2011).

2.2. Behavioral Finance

Behavior finance is a study that studies how psychological phenomena influence investors' financial behavior (Shefrin & Statman, 2000). Ross et al. (2018) explained that behavioral finance is research in finance, a branch of cognitive psychology that focuses on studying how a person thinks, considers, and makes decisions.

One of the behaviors that are used in this study is heuristics. Heuristics originate from the ancient Greek work ευρίσκω (= find) and refer to obtaining beneficial knowledge or results using shrewd guesses rather than prescribed formulas (Febiyanto, 2018). Heuristics is how people make conclusions based on what they find and available information. This heuristic causes investors to make mistakes in certain situations because not all practical instructions show the right and correct decision. Sometimes practical instructions also make investors overconfident in their decisions and tend to ignore information/other instructions.

2.3. Herding Behaviour

Herding behavior in financial markets is defined as a tendency to follow the actions of others in decision-making. Herding behavior is the behavior of investors who tend to follow other investors in investing without doing a fundamental analysis first, thus making the formed market inefficient (Ismiyanti et al., 2021). When investors have limited information, investors tend to follow the behavior of other investors in making investment decisions. The investor will ignore his personal information and follow the majority's decision.

2.4. Financial Literacy

According to Jacob et al. (2000), financial literacy is an education needed to help vulnerable people manage finances to reduce poverty. Financial literacy is an essential requirement to avoid possible financial problems, especially for investors making investment decisions. They need knowledge of managing and planning to decide which investments they should choose. Without sufficient financial literacy, investors can make wrong investment decisions.

3. Research Methods

In this research, the research method used is quantitative research methods. According to Sugiyono (2018), the quantitative method is based on positivism philosophy, used to examine populations or specific samples, data collection using research instruments, quantitative/statistical data analysis to test the hypotheses that have been set. The research design used was a survey.

3.1. Population and Sample

The population of this research is the Indonesian Capital Market investors in the Yogyakarta region. The sampling technique used in this study is a purposive sampling technique. The sample criteria used in this study are investors who have and are currently investing in the Indonesian Capital Market with a minimum age of 17. The criteria for investors with a minimum age of 17 are because the requirements to create a stock account in the capital market require an identity (KTP/Passport) (Sikapiuangmu, n.d.).

3.2. Definition of Operation Variables

In this study, there are two variables, namely the dependent variable and the independent variable. The dependent variable in this study is the investment decision. The indicators used to measure investment decision variables are loss aversion, regret aversion, and mental accounting. This variable will be measured through six questions. Each item will be measured using a Likert scale ranging from 1 to disagree to 6 to agree strongly.

If there are independent variables, the dependent variable is also present. With each increase in the independent variable, there is also an increase or decrease in the dependent variable. There are three independent variables in this study: heuristics, herding, and financial literacy. Heuristics will be measured through seven questions. Each item will be measured using a Likert scale ranging from 1 (disagree) to 6 (agree strongly). Herding behavior will be measured through four questions. Each item will be measured using a Likert scale ranging from 1 (disagree) to 6 (agree strongly). Financial literacy will be measured through seventeen questions. Each item will be measured using a Likert scale ranging from 1 (disagree) to 6 (agree strongly).

3.3. Data Collection Method

The data used in this study are primary. This study's data collection techniques used a questionnaire distributed directly through Google Forms.

3.4. Data Analysis Technique

Validity and reliability tests in this study were conducted on 100 respondents. In testing the instrument, this study used a pilot test. The analytical method used is

Structural Equation Modeling (SEM) using Partial Least Square (PLS).

3.5. Analysis Instruments

The questionnaire consists of two parts. The first part of the instrument contains the respondent's identity consisting of name, email, cellphone number, gender, age, status, education, type of work, investment duration, and type of investment owned/chosen. The second part contains a questionnaire containing questions related to research variables. The questions were modified from Luong and Ha (2011), Chen and Volpe (1998). The 6-point Likert scale measurement was used in this study.

4. Results

The following is a summary of the results of multiple linear regression analysis tests:

Table 1. Path coefficients' results (Primary data processed, 2020)

Hypothesis	Original Sample (O)	T-Statistics	P-values
H → ID	0,250	1,990	0,045
HB → ID	0,180	2,987	0,012
FL → ID	0,079	2.522	0,032

Hypothesis 1 is accepted because the correlation coefficient has a positive value of 0.250. That is, heuristics have a positive effect on investment decisions. The research questionnaire uses heuristic factors stated by Tversky and Kahneman (1974), where they find the factors included in the heuristic consist of three factors: representativeness, availability bias, and anchoring. The fourth factor of the study uses Waweru et al. (2008) factors, namely overconfidence. The results of this study indicate a positive effect of heuristics on investors' investment decisions. Investors in this study assume that heuristics can facilitate their information processing, speed up decision-making, make complex decision-making efficient, and help them focus on important information and ignore information that is not urgent.

Hypothesis 2 is accepted because the correlation coefficient has a positive value of 0.180. That is, herding behavior has a positive effect on investment decisions. The results of this study are evidenced by the answers to the online questionnaire filled out by respondents. On the indicator of selling and buying stocks, most respondents agreed on the effect of investors on investment decisions depending on others' investment decisions. When making investment decisions, the respondents are led by those of other investors. On the stock volume indicator, most respondents agreed about its effect on investment decisions. If the trading volumes of stocks were higher than usual last month, investors would increase the amount of share ownership, meaning that, when making an investment decision, the respondents were influenced by the trading volumes of stocks.

On the stock selection indicator, most respondents agreed on its effect on investment decisions to buy a stock if many stocks are ordered from the trading beginning. When making an investment decision, the respondents are influenced by a stock ordered since the trading beginning and buy this stock. Also, on the speed indicator leading investors, most respondents agreed on the influence of investment decisions. Investors usually react quickly to changes in other investors' decisions and follow their reactions to the stock market. When making investment decisions, the respondents are influenced by other investors' decisions and quickly follow their reaction to the stock market.

The results of this study indicate a positive effect of herding behavior on investors' investment decisions. Investment decisions of investors in this study are based more on the investment decisions of others. Besides, investors in making decisions depend on the decisions of the majority of investors. Investors only rely on collective information from other investors than personal information. From other people's decisions, investors react more quickly to changes in their investment decisions because they prefer other people's investment choices rather than their desires.

Hypothesis 3 is accepted because the correlation coefficient has a positive value of 0.079. That is, financial literacy has a positive effect on investment decisions.

Investors who have good financial literacy will plan and make their future investment decisions structured. They can also respond competently to problems in everyday matters related to finance.

The results of this study indicate that there is a significant positive effect on financial literacy on investment decisions. The better the level of financial literacy of investors, the better the investment decisions they make. Good financial literacy is demonstrated by understanding basic finance, insurance, savings, loans, and investments. Financial literacy is critical for investors so that they are not wrong in making their investment decisions. Investors sampled in this study have a moderate level of financial literacy and make investment decisions based on their levels of financial literacy.

5. Conclusion

This study aims to determine the effect of heuristics, herding behavior, and financial literacy on investment decisions. Based on the results of calculations and analysis that have been done, it can be concluded several things as follows:

1. Heuristics have a positive effect on investment decisions. Heuristics influence investors in processing information in making investment decisions. The higher the heuristics used by investors in processing investment information, the higher their investment decision-making is based on heuristics.
2. Herding behavior has a positive effect on investment decisions. From investors 'investment

decisions that depend on other investors' decisions, investors react more quickly to changes in other people's investment decisions. Besides, investors prefer to buy stocks if many stocks are ordered since the beginning of trading.

3. Financial literacy has a positive effect on investment decisions. The higher the level of investor financial literacy, the better the investment decisions. Good financial literacy in this study is shown by a good understanding of basic knowledge of finance, insurance, savings, loans, and investments.

6. Limitations and Further Study

This study has several limitations:

1. The sample in this study is investors in the Yogyakarta region who have been investing in the Indonesian capital market for 17 years minimum. However, the distribution of questionnaires in this study is less varied. In data retrieval using Google Forms, it turns out that most students fill in the form.

2. The number of samples is relatively small and is limited to investors who are still actively investing, so research results cannot yet be generalized in a broader scope, and generalization must be made carefully.

3. This research has not accurately reflected investment decisions due to the inappropriate use of analytical tools.

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