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

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Abstract

Investment development in Indonesia grew significantly, marked by an increase in the Composite Stock Price Index (JCI) which reached 23.54% in the last 5 (five) years. This is in line with increasing financial inclusion, public knowledge and awareness of financial planning and management. Financial investment in the Capital Market, especially stocks, is one of the most favorable by investors, as indicated by the growth in the number of investors on average per year reaching 60.65%. However, the JCI's performance for the last 5 (five) years has not been stable, where prices are still fluctuating. Therefore, investors are required to be more careful in making investment decisions that will affect future returns. In this regard, this study examines the effect of financial literacy, herding behavior and risk tolerance on investment decisions, with self-monitoring as a moderating effect. The results of the study prove that financial literacy, herding behavior and risk tolerance have a significant effect on investment decisions. Meanwhile, self-monitoring is not proven to moderate the relationship between financial literacy, herding behavior, and risk tolerance for investment decisions.

Keywords
financial literacy; herding behavior; risk tolerance; self-monitoring; investment decisions

I. Introduction

Today, the development of investment in Indonesia is growing significantly due to the increase in public knowledge and awareness of financial planning and management. Investment is a community commitment to allocating a number of funds or other resources aimed at obtaining future benefits/profits (Tandelilin Eduardus, 2017). According to Dewi and Vijaya (2018: 3), investment consists of several types, namely: 1) Real wealth investment, investment in visible or tangible assets such as land, buildings, and buildings. 2) Investment in visible personal wealth, investment in personal objects such as gold, diamonds, and, antiques. 3) Financial investment, securities investment such as deposits, stocks, and, bonds. 4) Commodity investment, investment in commodity goods such as coffee, and, palm oil.

Based on the four types of investment, financial investment in the Capital Market, especially stocks, is one of the most sought after by investors. Based on data from the Indonesian Central Securities Depository, the number of investors on the Indonesia Stock Exchange in 2021 is 7,478,211 people, an increase of 92.7% from 2020 which was 3,880,753 people. This shows that the Indonesian people are very enthusiastic and begin to look positively at investment opportunities in capital market instruments. On the other hand, the

performance of the Composite Stock Price Index (JCI) for the last 5 (five) years is still not stable, and prices are still moving fluctuating. However, in 2021 the JCI value began to increase significantly or reached 10.08%, indicating the investment potential in the capital market is starting to improve and the public is increasingly interested in it.

The increase in the value of the JCI is also in line with the recovery of the Indonesian economy after the Covid-19 pandemic as indicated by an increase in Gross Domestic Product (GDP) from minus 2.1% in 2020 to 3.7% in 2021 and is estimated to reach 5. 2% in 2022 (World Bank, 2021). Sihombing (2020) state that Covid-19 pandemic caused everyone to behave beyond normal limits as usual. The outbreak of this virus has an impact especially on the economy of a nation and Globally (Ningrum, 2020). The problems posed by the Covid-19 pandemic which have become a global problem have the potential to trigger a new social order or reconstruction (Bara, 2021). In connection with the JCI movement which is influenced by the fluctuating economic conditions in Indonesia, investors are required to be more careful in making investment decisions that will affect investment results in the future.

In investing, investors consider several factors such as the prospect of the investment instrument and the performance of the target company. These factors can influence the actions of investors in making investment decisions both rationally and irrationally. Investors who think rationally will analyze existing data or information as the basis for their investment decisions. This is an investor's ability to understand financial literacy. Meanwhile, irrational investors will act influenced by psychological factors involving emotions, traits, and personal preferences such as actions to follow the actions of others (herding behavior). However, investment decisions are not only influenced by financial literacy and herding behavior, in fact, the level of risk tolerance also plays a role in influencing investors' actions.

In general, rational investors have a clear and disciplined level of knowledge (financial literacy) and limits on risk tolerance. Rational investors tend not to be easily influenced by investment decisions made by other investors or by publicly available news. This is inversely proportional to irrational investor, who seem to follow suit (herding behavior) and are easy to make wrong decisions.

Regarding the influence of financial literacy, herding behavior, and risk tolerance on investment decisions, several studies have found inconsistent results so there are no results that become a standard reference for investor behavior. Therefore, the researcher investigates the factors that can strengthen or weaken (moderating variables) the influence of financial literacy, herding behavior, and risk tolerance on investment decisions. Baron and Byrne (2003) states that individuals can make plans, act and regulate decisions in behavior (self-monitoring). In this regard, the researcher suspects that self-monitoring can be a moderating variable. However, research related to self-monitoring as a moderating variable is still limited. Therefore, this study intends to examine the moderating effect of self-monitoring in its influence on investment decision-making, especially for investors on the Indonesia Stock Exchange. The title of this research is "The Effect of Financial Literacy, Herding Behavior and Risk Tolerance on Investment Decisions".

II. Research Method

This research is correlational, namely research that aims to explain the relationship between variables without any action that can influence or manipulate the condition of the variables (Fraenkel and Wellen, 2008). This research was conducted through the formulation of hypotheses on the variables consisting of (1). The independent variables are financial literacy, herding behavior, and risk tolerance. (2). The dependent variable, namely: investment decision. (3). Moderating variables, namely: self-monitoring.

III. Discussion

3.1 Results

a. Demographic Data Analysis

The number of respondents in the questionnaire collected in this study amounted to 131 people, but only 100 people meet the requirements, namely investors from the Indonesia Stock Exchange and actively conducting transactions in the last 6 (six) months. Based on the results obtained that the number of male investors is 62% and females as much as 38%, in terms of investor age as many as 63% of respondents aged 28-41 years, 23% of respondents aged 12-41 years, and 14% of respondents aged 42-57 year. Furthermore, based on their domicile, 88% of respondents live in Java, 5% of respondents live in Sulawesi, and 7% of respondents live in Sumatra. Characteristics and profiles of respondents can be seen in the following table:

Table 1. Characteristics and Profile of Research Respondents

Characteristics of Respondents	Category	Results
Investors in Stock Exchange	-	100%
Active transactions in the last 6 (six) months	-	100%
Gender	Male	38%
	Female	62%
Age	12 - 41 year	23%
	28 - 41 year	63%
	42 - 57 year	14%
Domicile	Java	88%
	Sulawesi	5%
	Sumatera	7%
Education	Senior High School	2%
	Diploma/ Bachelor (S1)	77%
	Postgraduate (S2)	21%
Platform/Security used	Indo Premier Securities (IPOT)	38%
	Panin Securities (POST)	17%
	BNI Securities (BIONS)	4%
	Mandiri Securities	8%
	Others	33%

b. Study Test Results

This study consists of 3 independent variables, namely financial literacy, herding behavior, and risk tolerance, which are attitudes, subjective norms, and behavioral control that are considered to be able to influence the investment decision of each individual/investor. In a research project that includes several variables, apart from knowing the descriptive statistics of the variables, this study also wants to know how one variable is related to another. That is, researchers want to see the nature, direction, and significance of the relationship of the variables used in the study (Sekaran and Bougie, 2016). According to Nuryadi et al. (2017) that to find out the relationship between two variables, it is done testing using the SmartPLS program.

Data analysis was carried out on the survey results that had been collected, to support the validity of the data, qualitative tests were carried out on the validity and reliability of the data, namely relevance or transferability, credibility or trustworthiness, authenticity or

confirmability, and dependability (Shenton, 2004; Daymon and Holloway, 2007). Next, the researchers conducted a test using the SmartPLS program, where validity, reliability, and path coefficient tests were carried out.

c. Validity Test

A validity test is a measurement of the level of accuracy of data or the extent to which the data (questionnaire) can represent a concept.

A questionnaire is said to be valid if the questions on the questionnaire can reveal something that will be measured by the questionnaire (Ghozali, 2009).

d. Reliability Test

A reliability test is a measurement to determine the level of consistency of indicators in measurement or the extent to which a measurement is declared free from error (Ghozali, 2009). This measurement will be carried out using the reliability statistics of Cronbach's Alpha.
The results of the validity and reliability tests are as follows:

Table 2. Validity and Reliability Test Results

Variable	Item	Outer Loading	Cronbach's Alpha	Rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Financial Literacy	FL1	0.770	0.861	0.896	0.893	0.581
	FL2	0.767				
	FL3	0.832				
	FL4	0.757				
	FL5	0.733				
	FL6	0.711				
Herding Behavior	HB1	0.791	0.911	0.929	0.934	0.739
	HB2	0.896				
	HB3	0.902				
	HB4	0.911				
	HB5	0.788				
Risk Tolerance	RT1	0.850	0.776	0.815	0.844	0.583
	RT3	0.816				
	RT4	0.817				
Self-Monitoring	SM1	0.825	0.832	0.840	0.881	0.598
	SM2	0.800				
	SM3	0.758				
	SM4	0.736				
	SM5	0.744				
Investment Decision	ID1	0.802	0.869	0.876	0.905	0.655
	ID2	0.821				
	ID3	0.806				
	ID4	0.824				
	ID5	0.792				

Validity and reliability tests are determined using the following indicators:

a. Outer Loading to measure the level of validity of the research indicators, where the expected outer loading value is > 0.60;
b. Cronbach's Alpha to measure the level of reliability, where the generally agreed lower (minimum) limit for the Cronbach's Alpha value is 0.70, although the Cronbach's Alpha value may drop to 0.60 in exploratory research (Hair et. al., 2010)
c. Rho_A to measure the level of reliability of each indicator with the expected value >0.7;
d. CR to show internal consistency, where the higher the CR value, the higher the consistency of the indicator in measuring the construct. The expected CR value is >0.7;
e. AVE to show the amount of variance that can be captured by the construct compared to the variance caused by measurement error. The AVE value must be >0.5.

Based on the results and measurement of validity and reliability researchers did not include one indicator, namely RT2 because it does not meet the expected level of validity for the specified limit. Next, the researcher analyzes the hypothesis using SmartPLS using items/indicators that have met the level of validity and reliability shown in the figure below:

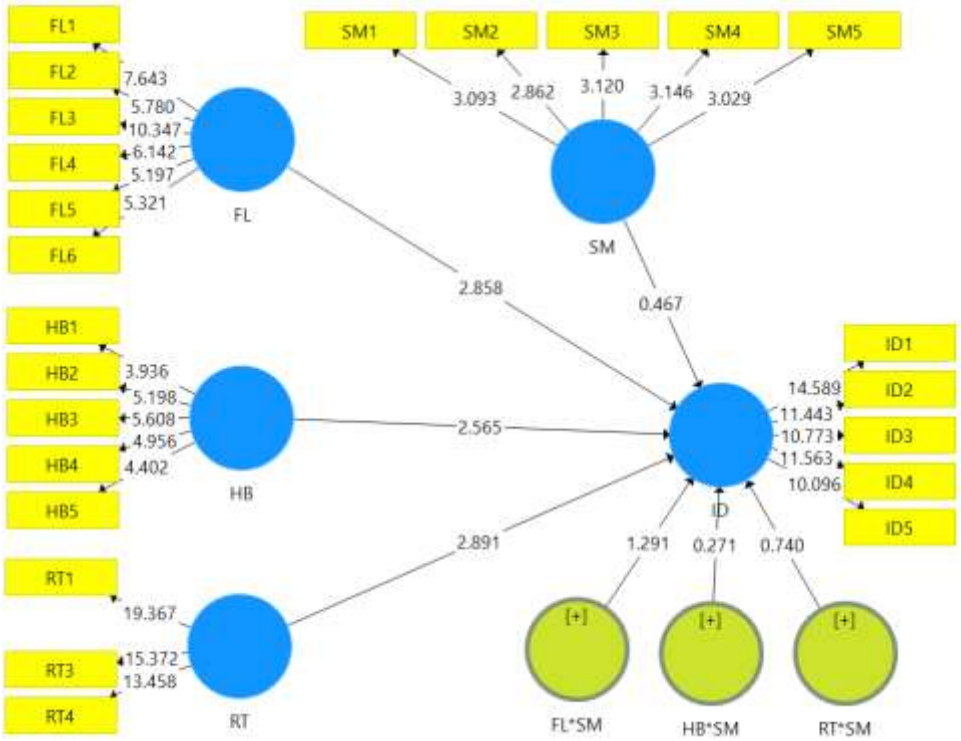

Figure 1. *Results of PLS Algorithm Data Model Analysis*

e. Path Analysis Test

A path analysis test is a test carried out to measure the relationship between variables that have been determined in the study (Ghozali, 2018).

In the results of the research above and based on the data processed using SmartPLS on the hypothesis used, there are:

3 (three) hypotheses are accepted and 3 (three) hypotheses are rejected. The results of the hypothesis analysis can be seen in table 5 as follows:

Table 3. Hypothesis Testing Results Using SmartPLS

Hypothesis	Path	Original Sample	Sample Mean	Std. Deviation	T-Stat	P-Value	Conclusion
H1	Financial Literacy □ Investment Decision	0.224	0.242	0.078	2.858	0.004	Hypothesis accepted
H2	Herding Behavior □ Investment Decision	0.268	0.282	0.104	2.565	0.011	Hypothesis accepted
H3	Risk Tolerance □ Investment Decision	0.271	0.263	0.094	2.891	0.004	Hypothesis accepted
H4	Financial Literacy*Self-Monitoring □ Investment Decision	-0.133	-0.117	0.103	1.291	0.197	Hypothesis rejected
H5	Herding Behavior*Self-Monitoring □ Investment Decision	-0.029	-0.023	0.108	0.271	0.787	Hypothesis rejected
H6	Risk Tolerance*Self-Monitoring □ Investment Decision	-0.091	-0.086	0.122	0.740	0.459	Hypothesis rejected

In addition to the explanation from the table above, the variables of Financial Literacy, Herding Behavior, and Risk Tolerance have a significant effect on Investment decisions as shown by each P Value below 0.05. Meanwhile, Self-Monitoring does not have a significant effect on moderating Financial Literacy, Herding Behavior, and Risk Tolerence on Investment Decisions.

3.2 Discussion

1. The influence of financial literacy on investment decisions.
   The test results show that the proposed hypothesis can be accepted where financial literacy has a positive effect on investment decisions empirically. The findings of this study illustrate that financial literacy affects the investment decisions of capital market investors who are respondents to this study. This means that with good financial literacy, someone will tend to make investment decisions quickly and based on consideration of the existing risk aspects. This is because by having high financial literacy someone will know better and can minimize the risks that will be faced. The results of this study are by the findings of research by Scheresberg (2013), which states that the higher the financial literacy of investors, the more likely someone is to participate and invest in stocks.
2. The effect of herding behavior on investment decisions.
   The test results show that the proposed hypothesis can be accepted where herding behavior has a positive effect on investment decisions empirically. The findings of this study illustrate that herding behavior affects the investment decisions of capital market investors who are respondents to this study. This means that with herding behavior, someone will tend to make investment decisions more quickly based on the decisions of other investors. Similar results were also found by Yuanzhi (2021) where investors react more quickly to the decisions of other investors and are more interested in buying shares.
3. The effect of risk tolerance on investment decisions.
   The test results show that the proposed hypothesis can be accepted where risk tolerance has a positive effect on investment decisions empirically. The findings of this study illustrate that risk tolerance affects the investment decisions of capital market investors who are respondents to this study. This means that with risk tolerance, someone will tend to participate in investing in the capital market. Similar results were also found by Mishra (2018), where investors who are more tolerant of risk become more

participative in the stock market while investors who tend to avoid risk are one of the strong reasons for not investing in the stock market.

4. Moderate effect of self monitoring on the influence of financial literacy on investment decision

   The test results show that the proposed hypothesis is rejected. This means that the moderating effect of self-monitoring on the influence of financial literacy on investment decisions cannot be proven. This shows that the self-monitoring owned by investors in this study is included in low self-monitoring because investors trust the information or knowledge they have. This finding also illustrates that investors have good financial literacy although there is an effect of self-monitoring but has not provided a significant relationship to the investment decision of investors in this study.

5. Moderating the effect of self-monitoring on the effect of herding behavior on investment decision

   The test results show that the proposed hypothesis is rejected. This means that the moderating effect of self-monitoring on the effect of herding behavior on investment decisions cannot be proven. This shows that the self-monitoring owned by investors in this study is included in low self-monitoring where investors do not change their behavior or are interested in information from the surrounding environment. This finding also illustrates that investors have herding behavior even though there is an effect of self monitoring, but it has not provided a significant relationship to the investment decision of investors in this study.

6. Moderate effect of self-monitoring on the effect of risk tolerance on investment decisions

   The test results show that the proposed hypothesis is rejected. This means that the moderating effect of self-monitoring on the effect of risk tolerance on investment decisions cannot be proven. This shows that the self-monitoring owned by investors in this study is included in low self-monitoring where investors are less concerned about the suitability or suitability of self-control. This finding also illustrates that investors have risk tolerance even though there is an effect of self-monitoring but has not provided a significant relationship to the investment decision of investors in this study.

IV. Conclusion

Based on the results of this study, it can be concluded that the higher the level of financial literacy possessed by investors, the faster investors make investment decisions based on predetermined considerations. This shows that the respondents in this study can manage their finances carefully and efficiently in the hope that the risk of loss can be avoided or at least minimized. On the other hand, the higher the herding behavior of investors, the faster the reaction to investment decisions will be. This shows that investors tend to follow other investors without conducting technical and fundamental analysis first. In addition, the higher the level of risk tolerance, the person will be brave in making decisions. This indicates that the respondents in this study are more likely to be risk-neutral so they have a fairly flexible attitude in making investment decisions.

Meanwhile, self-monitoring does not moderate the relationship between financial literacy, herding behavior, and risk tolerance for investment decisions. This shows that respondents in this study have low self-monitoring because investors carry out all investment activities based on what is known and believed so they are less adaptive to market situations. The factor that is thought to cause the moderating effect of self-monitoring that does not significantly affect the relationship between financial literacy, herding behavior, and risk tolerance for investment decisions is the Covid-19 pandemic. When in unstable conditions

such as a pandemic, human behavior is difficult to predict, including in decision-making (Andriani and Yolanda, 2021).

This research is expected to be a reference for academics and practitioners in the investment field, especially those related to behavioral finance. However, this study still has several limitations, including the criteria for respondents who are still general (only those who have made transactions in the last 6 months), limited variables, and the Covid-19 pandemic condition that can affect the results of the study. Therefore, future research can conduct tests with more specific respondent criteria, using other variables such as herding behavior and risk tolerance as moderating variables, where internal considerations can strengthen or weaken factors that influence investment decisions and test the effects of Covid-19.

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