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The Effect of Self Monitoring in the Relationship Between Financial Literacy, Herding, and Risk Tolerance with Investment Decisions
(Study During The Covid-19 Pandemic)

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Abstract:- The phenomenon of the growth in the number of investors in the capital market experiencing a rapid increase as seen in the *Single Investor Identification* (SID) even though amid the Covid-19 pandemic sentiment, because a number of investors shifted their funds from the real sector to capital market instruments as a result of all activities and limited mobility and some real sectors contracted during the pandemic. The more investors there are, the more investment decisions will be made automatically. So this study aims to analyze the influence of *financial literacy, herding,* and *risk tolerance* to investment decisions and the effect of *self-monitoring* as variables that moderate the relationship between *financial literacy, herding,* and *risk tolerance* to investment decisions. The research method uses the SPSS 23 program with *moderated regression analysis* (MRA) data *analysis* and distributes questionnaires using Google forms so that the research sample is 90 respondents. The results showed that *financial literacy* and *risk tolerance* had a positive effect on investment decisions. *Herding has* no effect on investment decisions. *Self monitoring* does not moderate the relationship *of a financial literacy, herding,* dan *risk tolerance* to investment decisions. The implications of the results of this study will expand investors' knowledge about the decision-making process and can make good decisions by thinking rationally to avoid making wrong decisions.

Keywords:- *Financial Literacy, Herding, Risk Tolerance, Self Monitoring and Investment Decisions.*

I. INTRODUCTION

The Covid-19 pandemic has put the economy in a state of uncertainty. The current crisis is different from the economic crises experienced in 1930, 1997 or 2008. In those years, the crisis started in the financial sector but now the crisis has directly touched the real sector as a result of policies to restrict mobility between regions and between countries that were strictly implemented. This policy has an impact on the impediment of people's mobility, thereby sharply reducing consumption, production and investment activities (Ministry of Finance 2020) . The Central Statistics Agency (BPS) recorded growth in the transportation and warehousing business sector contracted by 15.04% (YoY). This sector is the worst hit compared to other business fields. The decline in the transportation sector in 2020 was due to reduced community mobility during the Covid-19 pandemic. On the other hand, the government has also implemented large-scale social restrictions (PSBB) which include limiting the use of public transportation modes (Ridhoi, 2021) .

During the Covid-19 pandemic, economists will pay more attention to supply and demand. Investment is driven by demand so the simplest thing when you want to invest is to see whether the prospects of a business are growing or not. Business will thrive driven by demand. If the request does not exist, the potential will automatically be lost. Investors must have a careful calculation of the profits to be obtained and the period of money back.

Investment activity in Indonesia during the COVID- 19 pandemic has increased rapidly. This increase is reflected in the *Single Investor Identification* (SID) or the number of individual investors based on data from KSEI which shows that the number of investors in the Indonesian Capital Market consisting of stock, bond and mutual fund investors has experienced a rapid increase. The growth of *Single Investor Identification* (SID) prior to Covid-19, namely in 2019 reached 2.48 million *Single Investor Identification* (SID) or an increase of 53 percent from the position at the end of 2018 while during the Covid-19 period it was recorded that up to December 29, 2020 the number of investors reached 3.87 million *Single Investor Identification* (SID) or an increase of 56 percent from the position at the end of 2019 (Utami 2020).

Investment began to grow amid the Covid-19 pandemic sentiment, but not into the real sector but investors prefer to invest their funds in capital market instruments because the real sector is considered less profitable due to all activities and limited mobility of people, this can also be seen from some real sectors experiencing contraction during a pandemic. The rapid development of investors in the capital market cannot be separated from rapid digitalization during the pandemic. People become technology literate, because of the ease of transacting with *online* convenience through

applications and the ease of opening an account, along with a lot of virtual literacy on investment instruments and how to access them.

Investment activities carried out are closely related to investment decisions taken by investors. The more investors there are, the more investment decisions will be made automatically. In investing, investors act rationally or irrationally in making investment decisions. Therefore, when investors carry out investment activities, information is needed as an important factor that can influence investors when making decisions to invest. Investments made by investors must be based on good knowledge so that the risk of major losses can be avoided or at least minimized. In order for finances to be processed carefully and efficiently, it is important for individuals to understand *financial literacy*. When investing, it is necessary to have an adequate level of *financial literacy* so that individual financial decisions have a clear and precise direction and can provide the desired results . *Financial literacy* as individual financial knowledge is also a basic need for everyone to avoid financial problems. Someone who has a high literacy level tends to be wiser and bolder in making riskier investment decisions (Pradikasari and Isbanah 2018).

In making decisions, every investor always tries to make decisions rationally. But over time psychological factors also determine the investment. *Herding* is one of the psychological factors in making decisions. *Herding* is the behavior of investors who tend to follow other investors in investing without conducting a fundamental analysis first so that the formed market becomes inefficient . According to Anindya and Sukamulja (2017) investors with *herding* behavior will follow other investors in making decisions even though the actions taken are considered less logical when making decisions related to investment.

Risk tolerance is also one of the factors that influence investors. An investor will always consider every decision in investing, because in investing, not only profits are obtained but also risks that will always follow an investment. The higher the level of *risk tolerance* , the person will be brave in making decisions.

It is important for investors to monitor what has been done, apart from being a process of an investor's confidence in himself, this can also become a habit that can lead to a good disposition in someone. So, as an investor, you must always do *self-monitoring* so you can adapt if you get a different stock market situation. *Self monitoring is* needed in decision making because when investors monitor the progress of their work, investors will feel motivated to further improve their abilities.

Based on the description above, researchers are interested to test these variables by focusing on the study, entitled "The Effect Of *Self Monitoring* In The Relationship Between *Financial Literacy, Herding,* and *Risk Tolerance* With Investment Decisions (Study During The Covid-19 Pandemic)".

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A. *Behavioral Finance Theory*

According to the Qur'an et al. (2016) *Behavioral Finance Theory* is a theory about the influence of psychology on the behavior of financial actors and has a subsequent influence on the market . *Behavioral Finance* studies how psychology affects the financial decisions of companies and financial markets. One of the factors in decision making is the psychological factor. Psychological factors influence the investment decision making of an investor and the results to be achieved. Psychological factors tend to influence a person to act irrationally.

B. *Expected Utility Theory*

In 1947 Neumann & Morgenstern introduced an *expected utility* theory . *Expected utility* theory is one of the basics in making financial decisions. This theory requires individuals to think rationally in making financial decisions. Individuals who have a rational way of thinking can simply mean that in making decisions, individuals will choose an action that produces a high *expected utility* . At every step, investors in making financial decisions must be based on available information. Studying the existing financial information properly is an example of a person who has a good level of *financial literacy.*

C. *Self-Motoring* Theory

According to the theory of *self-monitoring* by Snyder (1983: 498), there are two types of information that can lead individuals to change their behavior. The first is information obtained from social situations and interpersonal relationships that indicate the appropriateness of individuals in behaving. Second, the information obtained from within the individual itself. Information that comes from oneself comes from ethics, espoused values, and traits.

D. *Financial Literacy*

With *financial literacy* are better then the person will tend to choose investments with risk is high and profits earned too high. This is because by having *a financial literacy* that a person's height will be more aware and to minimize the risks to be faced. *Financial literacy* will affect how people save, borrow, invest and manage finances further (Hailwood, 2007). Making an investment requires the right decision where every decision can affect investment results. In determining a decision, each individual will behave rationally and irrationally, depending on the information obtained. Someone with good financial literacy tends to have better control in determining a variety of investments because they have a lot of financial information.

E. *Herding*

Herding is an irrational behavior of investors because market participants or investors do not make investment decisions in accordance with the basics of thinking in economics related to investment, but they act on the actions of other investors if they are in the same condition or follow the market consensus. As a result, sometimes they will get a

return that is not appropriate or they have to take risks that should not be taken.

F. *Risk Tolerance*

Grable argues, *risk tolerance is* defined as the maximum amount of uncertainty that can occur when an individual makes a decision. If *risk tolerance is* ignored, planning and implementation can make life uncomfortable because the risks are not commensurate with the risk profile (Wardani & Lutfi, 2016: 199). Investors are divided into three types, namely *risk seeker, risk neutral,* and *risk averter* (Halim, 2005:42). *Risk Seeker* is an investor who prefers higher risk because investors know that *risk* and *return* are positively related. *Risk neutral* is an investor who is neutral to *risk* , but investors will be quite flexible and careful in making investment decisions. *Risk averter* is an investor who avoids risk, because investors will prefer to avoid the existing risks.

G. *Self Monitoring*

Self Monitoring is defined as a personality trait that indicates the extent to which people monitor their expressive behavior and self-presentation. According to the statement of Biais et al. (2005) define *self monitoring* as the ability of people to adjust their personal behavior to suit the social environment. According to Baron and Byrne (1994) *self-monitoring* is the ability to monitor and control behavior based on environmental situations and reactions of other people or external situations (high *self-monitoring*), or based on internal factors such as beliefs, attitudes, interests and individual interests (*self-monitoring).* low) Synder (1974) suggests two types of *self-monitoring* . *High self-monitoring* : individuals who have a *prototype of high self-monitoring are* usually very concerned about adjusting their behavior to the situation at hand. As a result, individuals become sensitive to social cues, and try to display behavior both verbally and non-verbally based on these cues. *Low self-monitoring* : individuals with *low cell-monitoring* are individuals who carry out all activities based on what they feel and believe.

H. *Invesment Decision*

With the increase in investment activity, this is related to investment decision making by investors. According to Budiarto (2017) investment decisions are taking policies on two or more alternatives to investment in the hope of getting profits in the future.

I. Hypothesis

Financial literacy is one of the important elements and is the basis for making investment decisions. Ariani *et al* . (2016) states if a person will act rationally if he has a level of *financial literacy* and can avoid deviant or inappropriate behavior, and conversely if an investor has a low level of *financial literacy, he is* less likely to choose shares as an investment instrument because shares are included in sufficient instruments. complex and has a high level of risk. Financial decisions based on planning and in line with knowledge will minimize risk in decision making.

This indicates that the higher the level of financial literacy, the better the person is in determining investment decisions. Based on this , the hypotheses that can be proposed are :

H_1: *Financial Literacy* has a positive effect on investment decisions

Herding is one of the behaviors of investors who are less *independent* because investors do not make decisions in investing according to the basics of thinking in economics related to investment, but they act on other investors if they are in the same condition or follow market consensus. According to (Setiawan et al., 2018) *herding* occurs to investors because of the same information between investors so that they take the same decision, and it occurs to investors who have different information but investors ignore their own information and follow other investors. Based on this, the hypotheses that can be proposed are:

H_2: *Herding* has a positive effect on investment decisions

Risk tolerance is the level of ability that you can accept in taking an investment risk (Wulandari & Iramani, 2014). Everyone has a different level of *tolerance* , differences in providing *risk tolerance* can be caused by, among others, age, career status, socioeconomic status, income, wealth and the period of income prospects. With a high level of *risk tolerance*, someone will tend to take bolder decisions than people with a low level of *risk tolerance* (Budiarto & Susanti, 2017). Based on this, the hypotheses that can be proposed are:

H_3 : *Risk Tolerance* has a positive effect on investment decisions

Making an investment requires the right decision where every decision can affect investment results. Someone with good *financial literacy* tends to have better control in determining a variety of investments because they have a lot of financial information. In addition to *financial literacy, self monitoring* also plays an important role in decision making . It is important for investors to monitor what has been done, other than as a process of an individual's confidence in himself. So as an investor, you must always do *self-monitoring* so you can adapt if you get a different stock market situation.

H_4 : Self monitoring moderates the influence of financial literacy on investment decisions

Investors who have high *herding* will more often follow other investors in making investment decisions. Investors consider other investors to have more abilities when making investment decisions, so that investors will follow investors who have more abilities. So, *self monitoring is* needed in decision making because when investors monitor the progress of their work, investors will feel motivated to further improve their abilities.

H_5 : Self monitoring moderates the effect of herding on investment decisions

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A person's tolerance for risk that will be accepted will affect the decision of what type of investment to take. Investors who have a high tolerance to risk will tend to choose the type of investment the higher the risk in the hope of translating ima high profits as well and for a person with *self-monitoring* high will be able to make decisions better than someone who has *self -monitoring* lower for individuals with *self-monitoring* high will always perform self-monitoring so that it will conduct an evaluation on him (Hadrian, 2020).

H_6 : Self Monitoring Moderates the Effect of Risk Tolerance on Investment Decisions

III. RESEARCH METHODS

This research is a research that tries to explain the causal relationship between variables through the submission of formulated hypotheses. The variables in this study consisted of independent variables (*financial literacy, herding,* and *risk tolerance*), the dependent variable (investment decisions), and moderating variables (*self monitoring*). The population in this study are investors or individuals who have made investments and are currently experiencing the Covid-19 pandemic located in Indonesia. Sources of data and information for this study were collected from primary sources through questionnaires. The sampling technique was based on *purposive sampling* , *convenience sampling* , *snowball sampling* and questionnaires were made using Google form. The distribution of the questionnaires was carried out from May 2021 to July 2021 (3 months). Questionnaires were distributed through *personal chat,* groups or investor communities through social media, namely by using the whatsapp, telegram, instagram, line messenger applications and also questionnaires distributed to the investment gallery of the Makassar Bongaya College of Economics. Questionnaires were also distributed through several webinars on stock investment and the Capital Market School. Data that is filled in by respondents through several options for distributing questionnaires is automatically entered into data tabulation so that 100 percent tabulation errors can be eliminated. So that the number of questionnaires collected was 90 respondents. This research uses multiple linear regression analysis technique through SPSS 23 program.

IV. RESULT

Hypothesis testing in this study using *Moderated Regression Analysis* (MRA). This regression analysis was carried out in two stages of testing. The first stage is multiple regression which is carried out without moderating variables. The second stage is regression which is done with *self monitoring* moderating variable.

A. Regression Analysis without Moderating Variables

The results of multiple regression testing without moderating variables can be seen in the following table:

Table 4.1 Regression Test Results without Moderating Variables

Independent Variable	Coefficient	t	Sig.	Information
Constant	6,752			
Financial literacy (X1)	0.152	3,465	0.001	Significant
Herding (X2)	-0.049	-0.791	0.431	Not significant
Risk tolerance (X3)	0.337	5,155	0.000	Significant
α = 5% = 0.05 R square = 0.310				

Source: Processed Data, 2021

Based on the results of the regression test above, the following mathematical equations can be arranged.

$Y = 6.752 + 0.152X1 – 0.049X2 + 0.337X3 + e$ … (1)

From the above equation shows that the coefficient value of the *financial literacy* variable (X1) and the *risk tolerance* variable (X3) is positive while the *herding* variable (X2) is negative. This indicates that the influence of *financial literacy* and *risk tolerance* variables is directly proportional to the investment decision variable, while the *herding* variable is not directly proportional to the investment decision variable.

The table above also shows that the *financial literacy* and *risk tolerance* variables show a significant influence on investment decisions, while the *herding* variable shows an insignificant effect on investment decisions. This can be seen from the probability value which is smaller than 0.05, where the probability value for *financial literacy is* 0.001 and *risk tolerance is* 0.000, while the probability value is greater than 0.05 for *herding* of 0.431. These results indicate that not all independent variables have a significant effect on the dependent variable.

B. Regression Analysis with Self Monitoring Moderate Variables

The results of multiple regression testing with *self-monitoring* moderating variables can be seen in the following table:

Table 4.2 Regression Test Results with Moderating Variables

Independent Variable	Coefficient	t	Sig.	Information
Constant	8,342			
X1.Z	0.000	-0.042	0.967	Not significant
X2.Z	0.000	0.012	0.990	Not significant
X3.Z	0.010	0.481	0.632	Not significant
α = 5% = 0.05 R square = 0.323				

Source: Processed Data, 2021

Based on the results of the regression test after interacting with the *self-monitoring* variable (Z), the mathematical equations can be arranged as follows:

$Y = 8.342 + 0.000X1.Z + 0.000X2.Z + 0.010X3.Z + e$ …(2)

From the table above, it is known that after the *financial literacy* variable interacts with *self monitoring* (moderation) it has a probability value of 0.967 above the standard value of 0.05 significance. The coefficient for the interaction of *financial literacy* and *self-monitoring* variables is 0.000, indicating a positive correlation coefficient that is not significant. This shows that *self monitoring* cannot moderate the influence of *financial literacy* on investment decisions.

The interaction of *herding* variable with *self monitoring* (moderation) has a probability value of 0.090 above the standard value of 0.05 significance. The coefficient for the interaction of *herding* and *self-monitoring* variables is 0.000, indicating a positive correlation coefficient that is not significant. This shows that *self monitoring* cannot moderate the effect of *herding* on investment decisions.

In addition, after the *risk tolerance* variable interacts with *self-monitoring* (moderation) it has a probability value of 0.632 above the standard value of 0.05 significance. The coefficient for the interaction of *risk tolerance* and *self-monitoring* variables is 0.010, indicating a positive correlation coefficient that is not significant. This shows that *self monitoring* cannot moderate the effect of *risk tolerance* on investment decisions.

V. DISCUSSION

A. The Effect of *Financial Literacy on Investment Decisions*

The test results show that the proposed hypothesis is accepted. Thus the hypothesis that *financial literacy* has a positive effect on investment decisions is empirically proven . In this case also obtained a positive direction. The findings of this study indicate that *financial literacy* influences investment decisions taken by capital market investors who are respondents in this study. This means that with good *financial literacy* , someone will tend to choose investments with high risks and high profits. 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 in accordance with the *expected utility theory* by Neumann & Morgenstern (1947) which states that *financial literacy* is financial knowledge needed to be able to provide the right decision making. Investors are also required to think rationally in making financial decisions.

B. The Effect of *Herding* on Investment Decisions

The test results show that the proposed hypothesis is rejected. Thus, the hypothesis that *herding* has a positive effect on investment decisions has not been empirically proven. The findings of this study indicate that *herding* cannot influence investment decisions taken by capital market investors who are respondents in this study. This means that the *herding* behavior in the sample of this study shows that the behavior of *independent* investors, most of whom do not follow other investors in making decisions without conducting fundamental and technical analysis first.

The results of this study are not in accordance with the *behavioral finance theory* by Professors Robert J. Shiller and Richard H. Thaler which explain that humans in making decisions are influenced by psychological factors, one of which is *herding* behavior . Investors with *herding* behavior are less *independent* because investors do not make decisions in investing in accordance with the basics of thinking in economics related to investment, but they act on the basis of other investors if they are in the same condition or follow market consensus.

C. The Effect of *Risk Tolerance* on Investment Decisions

The test results show that the proposed hypothesis is accepted. Thus the hypothesis that *risk tolerance* has a positive effect on investment decisions is empirically proven. In this case also obtained a positive direction. The findings of this study indicate that *risk tolerance* affects investment decisions taken by capital market investors who are respondents in this study. This means that an investor will always consider every decision in investing, because in investing, not only profits are obtained but also risks that will always follow an investment. The higher the level of *risk tolerance* , the person will be brave in making decisions.

The results of this study are in accordance with the *behavioral finance theory* by Professor Robert J. Shiller and Richard H. Thaler who explained that *risk* tolerance is one of the psychological factors that influence the investment decision making of an investor and the results to be achieved. With a high level of *risk tolerance,* a person will tend to take bolder decisions than people with a low level of *risk tolerance.*

D. The Effect of *Self Monitoring* Moderates *Financial Literacy on Investment Decisions*

The test results show that the proposed hypothesis is rejected. The meaning of *self monitoring* moderating the relationship between *financial literacy* and investment decisions cannot be proven. This can be explained by the researcher that the *self-monitoring* owned by investors in this study is included in low *self-monitoring* because investors trust information that is internal or comes from within themselves. This finding shows that good *financial literacy* is owned by investors even though it is supported by *self monitoring* but has not provided a meaningful relationship to investment decisions made by investor respondents in this study.

E. The Effect of *Self Monitoring* Moderates *Herding* on Investment Decisions

The test results show that the proposed hypothesis is rejected. The meaning of *self monitoring* moderating the relationship between *herding* and investment decisions cannot be proven. It can be explained that the *self-monitoring* owned by investors in this study is included in low *self-monitoring* because investors do not try to change their behavior according to the situation and are not interested in social information from the surrounding environment. This finding shows that the *herding* owned by investors, although supported by *self monitoring,* has not provided a significant

relationship to investment decisions made by investor respondents in this study.

F. The Effect of *Self Monitoring* Moderates *Risk Tolerance on* Investment Decisions

The test results show that the proposed hypothesis is rejected. This means that *self-monitoring* moderates the relationship between *risk tolerance* and investment decisions that cannot be proven. It can be explained that the *self-monitoring* owned by investors in this study is included in low *self-monitoring* because investors are less concerned with the suitability or appropriateness of presenting themselves and others. This individual lacks in controlling and regulating his presentation in his social environment. This finding indicates that the *risk tolerance* possessed by investors, although supported by *self monitoring,* has not provided a significant relationship to investment decisions made by investor respondents in this study.

VI. CONCLUSION

The higher the *financial literacy* that investors have, the investors will tend to be wiser and bolder in making investment decisions that are riskier and the profits obtained are also high. This shows that the respondents in this study are able to carefully and efficiently manage their finances so that the risk of major losses can be avoided or at least minimized. The lower *herding* owned by investors will result in better investment decisions taken by investors. This shows that the respondents in this study have *independent* behavior that tends to believe in their ability not to fully follow other investors without conducting technical and fundamental analysis first. The higher the level of *risk tolerance* , the person will be brave in making decisions. This shows that the respondents in this study are more likely to be risk neutral who usually expect the same level of return for each increase in risk and have a fairly flexible and vigilant attitude in making investment decisions.

Self monitoring does not moderate the relationship *of a financial literacy, herding,* d 's *risk tolerance* to investment decisions . This shows that the respondents in this study had a *self-monitoring* low because investors do all the activities be rdasarkan what is perceived, believed and without their attitudes to monitor what happens to him to find out if there is significant progress. Thus, investors who have *low self-monitoring* will be less adaptable if they get a different stock market situation.

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