

Analysis of Stock Investment Decisions on Investors in Surabaya

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Abstract

The purpose of this study is to analyze stock investment decisions in investors in Surabaya. This research is quantitative research. The Analysis technique used is the Partial Least Square (PLS) method using primary data. It involved 95 respondents who invested in stocks for more than a year as research objects. The results of the analysis show investors with a good understanding of financial literacy will make the right investment decisions and investors with a high level of financial literacy will be better aware and able to minimize the risks that will be faced but when investors want a high rate of return then investors can tolerate risk in order to get a profit in the future. The absence of a direct relationship between overconfidence to investment decisions can be incarnate in the world of stocks, the most respondents are respondents whose investment experience is 1 year to 3 years, it can be said as a beginner player in stock investing. beginners players are not reliable in making decisions. The most respondents were respondents aged 30-39 years. This age includes a mature age. Respondents with a mature age will be more careful, they do not make an unsecured excess confidence as a reference in acting in investment activities, although an attitude of excessive confidence can help respondents to be able to tolerate risks arising from activities.

Keywords

decision of investment;
financial literacy;
overconfidence; risk
tolerance



I. Introduction

With such rapid economic development, people began to think about earning other incomes beyond salary. Every society that wants to have a more decent life, must add another income beyond salary. One way to earn income outside the salary is to do investment activities. Investment is a sacrifice made at this time with the aim of gaining greater benefits in the future (Haming & Basalamah, 2010). Many people are interested in one investment or another, they view the investment as something interesting because they make a decision and then see the outcome of the decision they make (Awais et al, 2016). .

The capital market in Indonesia is experiencing ups and downs, especially now with the corona pandemic either directly or indirectly impacting the real sector investment and in the financial sector, especially on the Composite Stock Price Index (IHSG). This is demonstrated by PT Kustodian Sentral Efek Indonesia (KSEI) through the data below:

Table 1. Single Investor Identification amount data (SID)

Years	Number of capital market investors	Growth rate Number of capital market investors
2015	434.107	-
2016	894.116	105%
2017	1.122.668	25%
2018	1.619.372	44%
2019	2.493.833	54%
2020	3.042.476	21%

Source: www.ksei.co.id

From the data above, it is seen that the growth rate of the number of capital market investors in 2016 by 105% then in 2017 and 2020 experienced a significant decrease, the decline in 2020 is the highest decrease with the growth rate of the number of capital market investors only 21%. From the data above can also be concluded that the number of capital market investors in Indonesia continues to increase every year, However, when compared to the 2020 population census data, the number of investors in 2020 is only 1.12% of the total population. From this figure, it can be seen that only 1.12% of Indonesians dare to invest in financial assets in stocks, mutual funds or bonds.

Research conducted by Pertiwi et al (2020), Akims and Jagongo (2017) and Awais et al (2016) confirm that the level of investors' financial literacy affects their decision making. However, the results of research by Wardani and Lutfi (2017) state that financial literacy has no effect on investment decisions.

Research conducted by Khan et al (2017), Setiawan et al (2018) and Ainia and Lutfi (2018) confirms the results that overconfidence affects investor decision making. Meanwhile, the results of Pratiwi and Leon's (2019) research show no effect of overconfidence on investment decisions

Based on the background that has been stated and the existing research gap, the authors are interested in conducting a research entitled "**Analysis of Stock Investment Decisions on Investors in Surabaya**".

II. Review of Literature

2.1 Grand Theory

According to Lintner (1998) Behavioral finance is a science that studies how humans uncover and react to information in an effort to make decisions that can optimize the rate of return by paying attention to the risks inherent in it. Prospect Theory is a theory developed by Kahneman & Tversky (1979) which combines 2 (two) different disciplines, namely economics and psychology. This theory assumes that human behavior is considered strange and contradictory in making decisions and is not always rational. This theory is a criticism of expected utility theory and the development of financial behavior theory that offers new alternatives which are related to financial behavior.

2.2 Investment

According to Tandelilin (2010) investment is a commitment to a number of funds or other resources carried out at this time, with the aim of obtaining a number of profits in the future. According to Jogiyanto (2009) investments into financial assets can be direct investments and indirect investments. Direct investment is made by buying directly the financial assets of a company either through intermediaries or in other ways. On the

contrary, indirect investments are made by buying shares from investment companies that have a portfolio of financial assets from other companies. In choosing an investment, the investor will compare between returns and risks to find the optimal return

2.3 Decision of Investment

Decision making according to Goetsch and Davis as cited by Supranto (2003) Decision making is the selection of alternatives from many alternatives. According to Tandelilin (2010) investment is a number of commitments to a number of funds or other resources carried out at this time, with the aim of obtaining a number of future profits. From the two definitions above, it can be concluded that the investment decision is the result of the selection of an alternative selection of commitments to a number of funds or other resources conducted at this time, with the aim of obtaining a number of profits in the future. In conducting the investment process, it is necessary that the behavior that an investor should do in making investment decisions in various assets (real or financial). According to Ullah (2015) indicators used in measuring investment decision variables are financial objectives, evaluating financial performance when investing, financial ability to invest, market conditions when investing, prioritizing security, ability to manage finances.

2.4 Financial Literacy

According to Manurung (2012) financial literacy is a set of skills and knowledge that enables an individual to make decisions and be effective with all their financial resources. Indicators of financial literacy according to Mandle and Klein in Samsuri et al (2019), namely; Basic Personal Finance, Money Management, Credit and Debt Management, Saving and Investment, Risk Management.

In planning individual finances, it is required to be smart in managing finances so that financial knowledge is needed. Financial knowledge can help individuals get to know investing in terms of the advantages and risks they have, but not only financial knowledge is needed but also added with expertise in investing which is called financial literacy. Suggestions for increasing financial knowledge can facilitate decision making and assist management planning (Awais et al, 2016).

Individuals must invest in financial literacy education because that way individuals can make successful investment decisions (Akims, and Jagongo, 2017). According to Sabri in Samsuri (2019), it is revealed that people who have financial literacy and know the difference between mutual funds and stocks are willing to take risk during the investment decision making process. This means that the more financial knowledge a person has, the higher the risk tolerance is. This is because by having high financial literacy a person will know more and be able to minimize the risks that will be faced. In planning individual finances, it is required to be smart in managing finances so that financial knowledge is needed. Financial knowledge can help individuals to recognize investing in terms of the benefits and risks they have, but not only financial knowledge is needed but also added with expertise in investing which is called financial literacy (Awais et al, 2016).

2.5 Overconfidence

The definition of overconfidence according to Pompian (2006) is the belief that the information held by investors is more accurate than the actual situation and overconfidence bias arises through experiences that have been experienced. Indicators of overconfidence according to Shefrin in Setiawan et al (2018), Garcia et al in Khan et al (2017) and Chitra & Jayashree in Ainia & Lutfi (2018), namely; Trust in the knowledge you have, the ability

to choose stocks, the level of risk taking, the ability to control investment results, the belief in past success.

People who have overconfidence will underestimate the risks that will occur, so they feel they have more ability and knowledge to get benefits in the future (Setiawan *et al*, 2018). When investors think they have skills in the investment world, it will make investors overconfidence and consequently will increase the frequency of trading (Khan *et al*, 2017).

According to Pan and Statman in Rahman (2019) overconfidence can affect risk tolerance measurement, overconfidence investors have riskier portfolios such as high-risk tolerant investors. In addition, overconfident individuals tend to reject advice on diversifying their portfolios and it can be concluded that a confident tendency influences risk tolerance (Rahman, 2019)

2.6 Risk Tolerance

Risk tolerance according to Rivai (2006) is one of the factors that influence risk-making attitudes in decision making. Indicators of risk tolerance according to Coedell in Samsuri *et al* (2019) and Grable & Lytton in Ainia & Lutfi (2018) namely; attitudes towards risk, profit and security comparisons, financial ability to bear the risks.

One of the factors that can influence investor investment decisions is risk tolerance. Risk tolerance is the level of willingness to accept or tolerate risk. Risk tolerance is the second stage in the face of risk, which is related to the way a person responds or acts against risk. This can be done by understanding the amount of risk to an asset to be selected, then someone will be able to decide the risk opportunity that has been accepted so that it is in accordance with the expected rate of return in the future (Ainia and Lutfi, 2018). According to Raheja and Dhiman (2019) Investors who have a higher risk tolerance tend to place more funds in the capital market. In other words, investors who have a lower risk tolerance are more able to place their funds in bank accounts. Investors with a high risk tolerance are willing to invest more of their funds in higher risk assets as long as the expected level of investment is also higher.

2.7 Framework of Mind

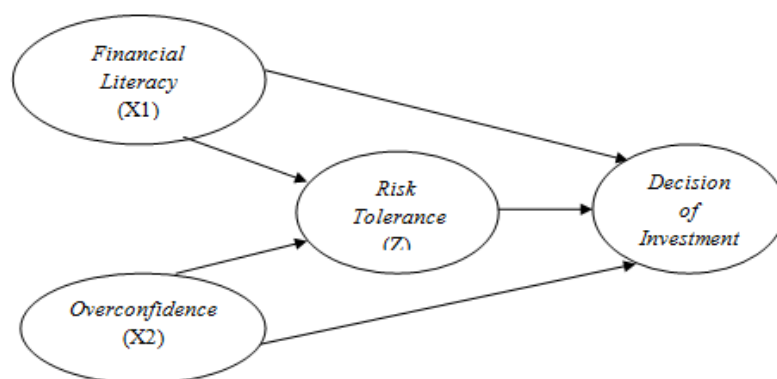


Figure 1. Theoretical Framework

2.8 Hypothesis

Previous research conducted by Awais *et al* (2016) and Akims and Jagongo (2017) confirms that the level of financial literacy of investors influences their decision making.

H1: Financial Literacy has a significant positive effect directly on the Decision of Investment

Previous research conducted by Khan et al (2017), Setiawan et al (2018) and Ainia and Lutfi (2018) confirmed the results that overconfidence influences investor decision making.

H2: Overconfidence has a significant positive effect directly on decision of Investment

Previous research conducted by Awais et al (2016) confirmed the results that financial literacy with an investor's risk tolerance can influence their decision making for the better.

H3: Financial Literacy through Risk Tolerance has a significant positive effect on Decision of Investment

Previous research conducted by Raheja and Dhiman (2019) confirmed that overconfidence with an investor's risk tolerance can affect his decision making.

H4 : Overconfidence through Risk Tolerance has a significant positive effect on decision of investment

III. Research Methods

This type of research is quantitative research with descriptive approach. The data used is primary data by using a structured questionnaire and likert scale as the claimant. The sample of this study is investors who invest in the stock market with criteria over the age of 17 and have invested at least 1 year with a total of 95 respondents. Data analysis in this study using Partial Least Square (PLS) method

IV. Results and Discussion

4.1 Respondent Profile

Table 2. Profile of Respondents

Category		amount	Percentage
Gender	Male	60	63%
	Female	35	37%
Age	17 - 29	31	33%
	30 - 39	33	35%
	40 - 50	23	24%
	More than 50 years	8	8%
Education	SD - SMA	5	5%
	D1 - D3	9	9%
	S1 – S3	81	86%
Investment Duration	1 - 3 years	79	83%
	more than 3 years - 6 years	11	12%
	more than 6 years	5	5%

The table above shows the respondent profile of individual investors who have invested in the stock market for more than 1 year and have earned income. Based on the table above, it can be seen that male stock investors in Surabaya are higher because they have a percentage of 63% with a total of 60 people. Meanwhile, only 37% of female

investors. Based on the majority age group aged 30-39 with a total of 33 at 35%. For those aged 17-29, 33% with 31 people and 40-50 years old, the number of stock investors in Surabaya is 23%. While the age of respondents over 50 years has a percentage of only 8%. Based on the education group, the percentage of acquisition was 86% of respondents with education levels from S1 to S3 with a total of 81 people. Meanwhile, for the D1 to D3 education levels, the percentage of stock investors in Surabaya is 9%. For elementary to high school education, the percentage is only 5%.

4.2 Descriptive Analysis

Analysis of the model in this study using the PLS-SEM method. The analysis using the PLS-SEM method includes 2 stages, namely the evaluation stage of the reflective measurement model and the evaluation stage of the structural model. Evaluation of the reflective measurement model consists of testing the validity and reliability of research indicators. This evaluation aims to measure the relationship between the variables and their constituent indicators, meaning how much the latent variable is able to contain the diversity of the data contained in each indicator and how much is the relationship between the latent variables and the indicators. In this case, there are three aspects that are assessed, namely Convergent Validity, discriminant validity, and composite reliability. Meanwhile, the evaluation of the structural model aims to test the research hypothesis.

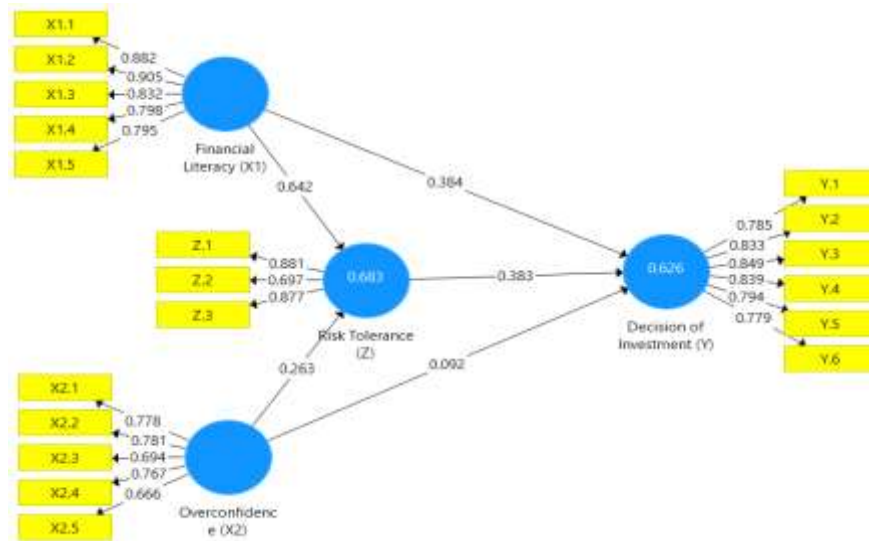


Figure 2. Path Diagram Output

From Figure 1, it can be seen that the loading factor is the estimation result of each indicator measuring the construct. The estimation results indicate that all indicators have met good validity because they have a loading factor of more than 0.50. Because the validity test with outer loadings has been fulfilled, the measurement model has the potential to be tested further.

Table 3. Fornell-Larcker Criterion

	(Y)	(X1)	(X2)	(Z)
Decision of Investment (Y)	0,814			
Financial Literacy (X1)	0,746	0,843		
Overconfidence (X2)	0,569	0,597	0,739	
Risk Tolerance (Z)	0,750	0,799	0,647	0,823

Source: output smart-PLS (2021).

The reading of the Fornell-Larcker Criterion table in table 3 is row-based. It can be seen that the value \sqrt{AVE} variable *Decision of Investment* (Y) of 0.814, while the highest correlation value of the *Decision of Investment* (Y) variable with other variables is only 0.750, thus \sqrt{AVE} variable *Decision of Investment* (Y) greater than the correlation of the *Decision of Investment* (Y) with other variables. Likewise for other variables that show \sqrt{AVE} greater than the correlation between variables. So that the terms discriminant validity with \sqrt{AVE} has been fulfilled.

Table 4. Composite Reliability Test

	Composite Reliability
Decision of Investment (Y)	0,921
Financial Literacy (X1)	0,925
Overconfidence (X2)	0,857
Risk Tolerance (Z)	0,862

Source: output smart-PLS (2021).

From table 4 the results of the composite reliability test show that all constructs are reliable or have acceptable composite reliability values. This is because the value of the composite reliability on each construct is greater than 0.8. Another measurement that is also used to test reliability is Average Variance Extracted (AVE). The AVE value aims to measure the level of variance of a construct component compiled from its indicator by adjusting the error rate. Testing with AVE value is more critical than compositere liability. The minimum recommended AVE value is 0.50. AVE output obtained from the PLS Algorithm Report SmartPLS is presented in table 5.

Table 5. Value of Average Variance Extracted (AVE)

	(AVE)
Decision of Investment (Y)	0,662
Financial Literacy (X1)	0,711
Overconfidence (X2)	0,545
Risk Tolerance (Z)	0,677

Source: output smart-PLS (2021).

From table 5 the test results with the AVE value show that all constructs have potential reliability to be tested further. This is because the AVE value in all constructs is greater than 0.50.

Table 6. R Square

	R Square
Decision of Investment (Y)	0,626
Risk Tolerance (Z)	0,683

Source: output smart-PLS (2021).

The R Square value of the Decision of Investment (Y) variable is 0.626, meaning that the Financial Literacy, Overconfidence, and Risk Tolerance variables simultaneously explain their effect on the Decision of Investment (Y) variable by 62.6% while the remaining 37.4% is explained by other variables outside the model under study. Meanwhile, the R Square value of the Risk Tolerance (Z) variable is 0.683 which means that the Financial Literacy and Overconfidence variables are simultaneously able to explain their effect on the Risk Tolerance (Z) variable of 68.3% while the remaining 31.7% is explained by other variables outside the model studied such as Investment Experience, Risk Perception, Loss Aversion, Optimism, Motivation and so on.

Table 7. Path Coefficients

	(O)	(O/STDEV)	P Values	Information
Financial Literacy (X1) -> Decision of Investment (Y)	0,384	2,943	0,003	There's An Influence
Overconfidence (X2) -> Decision of Investment (Y)	0,092	0,881	0,378	No Influence

Source: output smart-PLS (2021).

From the table above it can be concluded that the Financial Literacy hypothesis has a significant positive effect directly on the Decision of Investment is acceptable, with path coefficients of 0.384 and a P-Value of 0.003 <0.05, so there is a positive or significant (Positive) influence. Financial literacy itself is financial knowledge and the ability to apply it to make effective decisions. In this study, it appears that the indicator that most contributes to financial literacy is financial recording which can help manage finances better. By recording finances, we can find out the condition of our personal finances, whether expenditures are smaller than income, whether investment performance has increased every year. However, at this time the respondents gave the best response to the statement that investment is investment for the long term with the hope of future benefits. This shows that the respondent is currently aware that investment is an investment with a long term and the respondent carries out investment activities to get profit in the future. Long-term investment is investment in a period of more than one year with the aim of achieving high returns. The goal of long-term investing is to get passive income in each period, such as dividends and capital gains. Respondents' awareness of investment will encourage them to invest. Choose a stock value that will last not only in the next 5 or 10 years, but if possible, invest in a company that has the potential to survive and profit as long as possible. Warren Buffet said, "Our favorite holding period is forever."

The results of this study are in accordance with research conducted by Awais et al (2016) which states that increasing financial knowledge can facilitate decision making and assist management planning. It is also supported by research by Akims and Jagongo (2017) which states that someone with a low understanding of financial literacy will make bad investment decisions while those who understand financial literacy well will make better investment decisions.

Overconfidence has a direct significant positive effect on Decision of investment which is unacceptable, with path coefficients of 0.092 and a P-Value of $0.378 > 0.05$, so there is no influence or Non-Significant (Positive). The results of this study are different from research conducted by Khan et al (2017), Setiawan et al (2018) and Ainia and Lutfi (2018) which confirm that overconfidence affects investor decision making. In this study, the measurement of overconfidence, most of the respondents, have shown that they believe and believe that the information they have is more accurate than the real situation. Respondents also feel confident in their ability to realize plans and feel that the predictions about stocks they make are always correct. However, this does not appear to have influenced the respondents' investment decisions. In making investment decisions, of course it is influenced by many factors and in this study the overconfidence attitude of the respondents has not been able to influence the investment decision. When viewed from the characteristics of the respondents, the most respondents are respondents whose investment experience is 1 year to 3 years. Investment experience of 1 year to 3 years can be said as a beginner player in stock investing. The absence of a direct relationship between overconfidence and investment decisions can be seen in the world of stocks, beginners players are not reliable in making decisions.

The results of this study are in accordance with research conducted by Pratiwi & Leon (2019) which states that overconfidence does not have a significant effect on investment decisions. Most of the respondents have investment experience of less than 5 years. It can be said that beginners players in the capital market, especially stocks, do not influence investment decisions.

Table 8 Specific Indirect Effects

	(O)	(O/STDEV)	P Values	Information
Financial Literacy (X1) -> Risk Tolerance (Z) -> Decision of Investment (Y)	0,246	2,420	0,016	There's An Influence
Overconfidence (X2) -> Risk Tolerance (Z) -> Decision of Investment (Y)	0,101	1,754	0,080	No Influence

Source: output smart-PLS (2021).

From the table above it can be concluded that the Financial Literacy hypothesis through Risk Tolerance has a significant positive effect on the Decision of Investment is acceptable, with path coefficients of 0.246 and a P-Value of $0.016 < 0.05$, then there is a mediating or significant (positive) effect. This shows that risk tolerance is suitable to be used as an intervening variable. Most of the respondents have indicated that their financial literacy can increase tolerance for the risks they take so as to improve investment decisions. Financial literacy itself is financial knowledge and the ability to apply it to make effective decisions. Nowadays, knowledge and information can be accessed more easily in this online era. respondents realize that investment is investment for the long term with the hope of future benefits. This shows that the respondents in this study have good financial literacy, especially in the investment sector. Meanwhile, the indicator that most contributes to financial literacy is money management. Financial records can help in better managing finances. By recording finances, we can find out the condition of our personal finances, whether expenditures are smaller than income, whether investment performance has increased every year. The respondent's financial literacy regarding investment will

influence the evaluation process of alternatives and be faced with risks regarding stock investment. In this study, the current perceived risk tolerance of respondents is related to benefits and safety. Respondents feel that they are more concerned with profit than security in order to get high profits. Because they have financial literacy, respondents dare to tolerate risk. Having tolerated the risk of evaluating alternatives will form an investment decision. In this study, respondents will invest some of their wealth in stocks because the respondents have the financial ability to invest and show that the character of investors in Surabaya is strong enough to invest. The more respondents invest, the respondent will also get high returns. The results of this study are in accordance with research conducted by Awais et al (2016) which explains that financial literacy will lead investors to tolerate greater risk and investors must then choose risky investments in order to get a high rate of return.

Overconfidence through Risk Tolerance has a significant positive effect on Decision of Investment which is unacceptable, with path coefficients of 0.101 and a P-Value of $0.080 > 0.05$, so there is no mediation or non-significant (Positive) effect. In this study, the measurement of overconfidence, most of the respondents, have shown that they believe and believe that the information they have is more accurate than the real situation. Respondents also feel confident in their ability to realize plans and feel that the predictions about stocks they make are always correct. However, this does not seem to be able to make an investment decision on stock investment. In the measurement of risk tolerance, respondents show that they are more concerned with profit than security in order to get high profits. This shows that respondents have an aggressive nature in investing because they are more willing to make investment decisions with high risks and allocate their funds to high-risk market instruments. However, this cannot influence the attitude of overconfidence with investment decisions. In making investment decisions, of course it is influenced by a lot of factors and in this study the overconfidence attitude of the respondent is not able to influence investment decisions and even though the respondent has a tolerance for risk, this also does not affect his investment decision. When viewed from the characteristics of the respondents, the most respondents are respondents aged 30-39 years. This age includes the age that is mature enough. Respondents with a fairly mature age will be more careful, they do not make excessive self-confidence without a basis as a reference in acting in investing activities, although an attitude of excessive self-confidence can help respondents to be able to tolerate risks arising from activities. It can be concluded that risk tolerance as an intervening variable used in this study is not able to mediate the effect of overconfidence on investment decision.

V. Conclusion

Based on the results of the research and discussion that has been described, the conclusion that can be drawn from this study is that Financial Literacy directly contributes to the Decision of Investment. This is because investors with a good understanding of financial literacy will make the right and good investment decisions. Financial Literacy through Risk Tolerance is able to encourage the Decision of Investment. Investors with a high level of financial literacy will know better and be able to minimize the risks that will be faced, but when investors want a high rate of return, investors can tolerate risk in order to get future profits. Investors must pursue risk in investment decisions because when investors enter into risky investments, they will get high returns.

The absence of a direct relationship between overconfidence and investment decisions can be attributed to the fact that most respondents in this study have 1 year to 3

years investment experience and can be said to be a beginner player in stock investing. Those beginner in stock investing are not yet reliable in making decisions. Most respondents are respondents aged 30-39 years. This age includes the age that is mature enough. Respondents with a fairly mature age will be more careful, they do not make excessive self-confidence without a basis as a reference in acting in investing activities, although an attitude of excessive self-confidence can help respondents to be able to tolerate risks arising from activities.

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