The Effect of Herding Bias, Overconfidence, and Risk Tolerance on Stock Investment Decision-Making on Students in Accounting Department Of Bali State Polytechnic

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Abstract: Students are the individuals who have the potential to invest because they have learned during lectures. Students can apply the theory they have learned in real terms in the form of investment practice. However, investment decision-making by investors is not always done rationally. Many factors influence investment decision-making. One of them is social factors, namely herding bias, and psychological factors, namely overconfidence and risk tolerance. This study aims to describe the effect of herding bias, overconfidence, and risk tolerance partially and simultaneously on stock investment decision-making in students of the Bali State Polytechnic Accounting Department. This study analyzed primary data from the questionnaire. The respondents in this study were 106 students of the 2018 Applied Managerial Accounting Undergraduate Study Program who had taken the capital market and investment courses. Testing of research variables was carried out using multiple linear regression analysis techniques. The results of this study indicate that partially, herding bias and risk tolerance have a positive and insignificant effect on stock investment decision-making in students majoring in Accounting at the Bali State Polytechnic. Meanwhile, overconfidence has a positive and significant effect on stock investment decision-making in students majoring in Accounting at the Bali State Polytechnic. Simultaneously or together, herding bias, overconfidence, and risk tolerance have a positive and significant effect on stock investment decision-making in students of the Bali State Polytechnic Accounting Department.

Keywords: herding bias, overconfidence, risk tolerance, investment decisions

Introduction

The IDX Composite (Indonesia Composite Index) experienced a significant decline during the pandemic. This is inversely proportional to the number of Single Investor Identification (SID) registered at KSEI. The number of investors from 2020 to 2021 has increased by 92.99%. Investors with jobs as students were recorded at 28.03% or with an asset value of Rp. 17.42 Trillion which shows that students are quite interested in investing their funds in the Indonesian capital market (KSEI, 2021). Therefore, the subjects in this study were students of the Bali State Polytechnic Accounting Department who had previously participated in capital market lectures. Of course, after participating in the capital market and investment lectures, students have a sufficient understanding of investing, but in practice, there are still many students who use speculators or rely on recommendations from the community or certain groups of stock investors in making investment decisions.

Investors do not always make investment decisions rationally because they are influenced by several factors, one of which is social factors such as herding bias. Biased vultures are behaviors in which a person makes a decision by following the decisions of the crowd. Herding bias occurs in junior or novice investors who have little experience so as to ignore the information they have and follow other investors to minimize risk (Afriani & Halmawati, 2019). In addition to social factors, psychological factors also influence investment decisions. This causes the onset of bias in behavior so that a person loses objectivity in decision-making (Chopde & Kulkarni, 2017). Psychologically, things that can influence investment decision-making are overconfidence and risk tolerance. Overconfidence can lead investors to become overestimate their knowledge

and underestimate risk (Nofsinger, 2016). Risk tolerance is a person's ability to accept risk. People with a high level of risk tolerance will be more courageous when making decisions (Masruroh & Sari, 2021).

Research conducted by (Afriani & Halmawati, 2019) and (Fridana & Asandimitra, 2020) explained that herding bias has a positive and significant effect on investment decisions. A series of studies conducted by (Setiawan et al., 2018) and (Herlina et al., 2020) stated that herding bias has no effect on investment decisions. The results of the research conducted by (Pradikasari & Isbanah, 2018) stated that overconfidence affects investment decisions because respondents believe they have the ability they already have without looking at what risks will be received when investing. However, according to (Dwi Rakhmatulloh & Asandimitra, 2019) it is stated that overconfidence has no influence on investment decisions. Bailey & Kinerson (Ayu Wulandari & Iramani, 2014) found that risk tolerance is a very strong predictor of making investment decisions. In contrast, the research conducted by (Putra et al., 2016) stated that risk tolerance has no influence on investment decisions. Thus, further research was carried out on "The Influence of Herding Bias, Overconfidence, and Risk Tolerance on Stock Investment Decision Making in Students of the Accounting Department of the Bali State Polytechnic". This study aims to describe the influence of herding bias, overconfidence, and risk tolerance partially and simultaneously on stock investment decision-making in students of the Accounting Department of the Bali State Polytechnic.

Method

The research was carried out at the Bali State Polytechnic which was carried out from February to July 2022. The target population used is 1,273 students of the Accounting Department of the Bali State Polytechnic. Meanwhile, the accessible population is students of the Applied Managerial Accounting Undergraduate Study Program, Department of Accounting, Bali State Polytechnic, Class of 2018 who have participated in the capital market and investment courses as many as 169 people. The sample used was selected by a simple random sampling method and the minimum sample size was determined by the Slovin formula at a margin of error of 6% of 106 people.

This study consists of 3 independent variables, namely, herding bias, overconfidence, and risk tolerance, and 1 dependent variable, namely investment decisions. The data collected is primary data through a questionnaire that is disseminated and filled in through a Google Form with a response in the form of a Likert scale score. The data analysis technique used is descriptive statistics. Hypothesis testing uses multiple linear regression analysis with the following equation model:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e \tag{1}$$

Information:

Y	= Investment Decision Making
a	= Constant
b_1-b_3	= Regression coefficient value
X_1	= Stock Valuation
X_2	= Risk Tolerance
X_3	= Overconfidence
e	= Variable not studied

Result and Discussion

1. Description of Research Results

The subject of this study was students of the Accounting Department of the Bali State Polytechnic, Bachelor of Applied Managerial Accounting Study Program, class of 2018, totaling 106 people. Table 1 shows that the majority of respondents are female. Based on the investment durations, the majority of respondents have carried out investments less than or equal to 1 year.

Table 1. Result Description Respondents

Description	Amount	Percentage (%)
Gender:		
Female	85	80.19
Male	21	19.81
Investment duration:		
<= 1 year	85	80.19
2 year	16	15.09
3 year	4	3.77
>= 4 year	1	0.94

Source: Primary data processed, 2022

2. Instrument Validity and Reliability Test

Table 2. Validity Test Results

Variabel	Item	R_{hitung}	R_{tabel}	Keterangan	Min	Max	Mean	Std. Deviation
	$X_{1.1}$	0.66	0.16	Valid	2.00	5.00	3.97	0.83
	$X_{1.2}$	0.64	0.16	Valid	2.00	5.00	3.63	0.93
Herding Bias (X1)	$X_{1.3}$	0.61	0.16	Valid	1.00	5.00	3.38	0.87
	$X_{1.4}$	0.63	0.16	Valid	1.00	5.00	3.48	0.90
	$X_{1.5}$	0.65	0.16	Valid	1.00	5.00	3.59	0.91
	$X_{2.1}$	0.76	0.16	Valid	2.00	5.00	3.86	0.71
	$X_{2.2}$	0.66	0.16	Valid	2.00	5.00	3.82	0.70
	$X_{2.3}$	0.78	0.16	Valid	1.00	5.00	3.52	0.75
Overconfidence (X2)	$X_{2.4}$	0.83	0.16	Valid	1.00	5.00	2.72	0.84
	$X_{2.5}$	0.66	0.16	Valid	1.00	5.00	3.20	0.99
	$X_{2.6}$	0.72	0.16	Valid	1.00	5.00	3.42	0.84
	$X_{2.7}$	0.80	0.16	Valid	1.00	5.00	2.69	0.90
	$X_{2.8}$	0.79	0.16	Valid	1.00	5.00	2.82	0.87
	$X_{3.1}$	0.27	0.16	Valid	3.00	5.00	4.15	0.49
	$X_{3.2}$	0.69	0.16	Valid	1.00	5.00	3.08	0.98
	$X_{3.3}$	0.76	0.16	Valid	1.00	5.00	1.81	0.99
Risk Tolerance (X3)	$X_{3.4}$	0.74	0.16	Valid	1.00	5.00	2.05	0.89
	$X_{3.5}$	0.67	0.16	Valid	1.00	5.00	2.67	1.08
	$X_{3.6}$	0.64	0.16	Valid	1.00	5.00	3.33	0.88
	$X_{3.7}$	0.33	0.16	Valid	1.00	5.00	3.49	0.65
	$X_{3.8}$	0.76	0.16	Valid	1.00	5.00	2.35	0.96
	$Y_{.1}$	0.67	0.16	Valid	2.00	5.00	3.91	0.67
	$Y_{.2}$	0.60	0.16	Valid	1.00	5.00	3.56	1.00
	$Y_{.3}$	0.64	0.16	Valid	1.00	5.00	3.77	0.67
	$Y_{.4}$	0.75	0.16	Valid	1.00	5.00	3.62	0.67
	$Y_{.5}$	0.69	0.16	Valid	2.00	5.00	3.60	0.63
Investment Decisions (Y)	$Y_{.6}$	0.77	0.16	Valid	2.00	5.00	3.34	0.70
	$Y_{.7}$	0.48	0.16	Valid	3.00	5.00	4.31	0.61
	$Y_{.8}$	0.58	0.16	Valid	3.00	5.00	4.29	0.60
	$Y_{.9}$	0.79	0.16	Valid	2.00	5.00	3.71	0.65
	$Y_{.10}$	0.78	0.16	Valid	2.00	5.00	3.73	0.68
	$Y_{.11}$	0.76	0.16	Valid	1.00	5.00	3.67	0.83

Source: Primary data processed, 2022

From Table 2, it can be concluded that each item on the entire variable has a calculated R-value more than the R-table so that it can be declared valid.

Table 3. Reliability Test Results

Variable	Cronbach's Alpha	N of Items	Description
Herding Bias (X1)	0.63	5	Reliable
Overconfidence (X2)	0.88	8	Reliable
Risk Tolerance (X3)	0.78	8	Reliable
Investment Decisions (Y)	0.88	11	Reliable

Source: Primary data processed, 2022

Table 3 shows that each variable has a value of Cronbach's Alpha more than 0.60 so that all variables can be declared reliable.

3. Descriptive Statistical Test

Table 2 shows that each variable gets the lowest answer of 1.00 and the highest value of 5.00 from the respondent. Statement X1.1 received the highest answer mean among other biased herding statements at 3.97. This value shows that respondents agree with the statement in the research questionnaire because it is in the range of > 3.40 – 4.20 with the results of high measurement criteria. The standard deviation of the statement with the highest average is 0.83. This indicates that there is a difference in the value of the statement X1.1 against the mean value of 0.83. The highest average answer in statement X1.1 indicates that students of the Accounting Department of the Politeknik Negeri Bali agree that they are consulting when making investment decisions.

Statement X2.1 gets the highest answer means among other overconfidence statements at 3.86. This value represents that respondents agree with the statement in the research questionnaire because it is in the range of > 3.40 – 4.20 with the results of high measurement criteria. The standard deviation of the statement with the highest average is 0.71. This shows that there is a difference in the value of statement X2.1 against the mean value of 0.71. The highest average answer in statement X2.1 indicates that students of the Accounting Department of Politeknik Negeri Bali agree that they are confident in their investment choices when making investment decisions.

Statement X3.1 received the highest answer mean among other risk tolerance statements at 4.15. This value shows that respondents agree with the statement in the research questionnaire because it is in the range of > 3.40 – 4.20 with the results of high measurement criteria. The standard deviation of the statement with the highest average is 0.49. This shows that there is a difference in the value of the X3.1 statement against the mean value of 0.49. The highest average answer to statement X3.1 indicates that students of the Accounting Department of Bali State Polytechnic agree that they accept the risk of stock investment when making investment decisions.

Statement Y.7 got the highest average answer among other investment decision statements of 4.31. This value shows that respondents strongly agree with the statement in the research questionnaire because it is in the range of > 4.20 – 5.00 with the results of very high measurement criteria. This shows that there is a difference in the value of the statement Y.7 against its average value of 0.61. The highest average answer in statement Y.7 shows that students of the Accounting Department of the Bali State Polytechnic really understand that stock prices fluctuate greatly when making investment decisions.

4. Hypothesis Test

Table 4. Multiple Linear Regression Test results and T Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	23.42	4.09		5.73	0.00
1	Herding Bias (X1)	0.25	0.17	0.13	1.47	0.15
	Overconfidence (X2)	0.46	0.10	0.43	4.47	0.00
	Risk Tolerance (X3)	0.07	0.12	0.06	0.63	0.53

a. *Dependent Variable*: Investment Decisions (Y)

Source: Primary data processed, 2022

In this study, the number of samples was N = 106, the number of parameters (k) = 4, then df = 102 at the significance level α = 0.05 so a T-table of 1.66 was obtained. The herding bias variable has a calculated value of 1.47 < T-tabel 1.66 or a significance value of 0.15 > 0.05 so it can be concluded that the herding bias has a positive and insignificant influence on stock investment decision-making in students of the Accounting Department of the Bali State Polytechnic. This shows that students of the Accounting Department of the Bali State Polytechnic get sufficient information and do a good analysis in making stock investment decisions. In addition, the subjects of this study are students who have previously attended capital market and investment courses. So that they can easily gain knowledge related to investment and capital markets both in courses and seminars. The existence of capital market study groups and investment galleries on campus that hold

training related to how to analyze and invest in stocks for a company. The majority of respondents in this study have invested less or within a year so they are classified as beginner investors. With the knowledge they have about stock investing, investors will tend to pay more attention to fundamental information in making investment decisions.

The overconfidence variable has a calculated value of 4.47 > T-tabel 1.66 or a significance value of 0.00 < 0.05. So it can be concluded that overconfidence has a positive and significant effect on stock investment decision-making in students of the Accounting Department of the Bali State Polytechnic. Overconfident people will overestimate the knowledge they have and underestimate the risks that exist. This results in investors being bolder in making investment decisions. In this study, respondents were students in the applied undergraduate education level were in college respondents got a lot of facilities that made it easier to get information about the capital market and investment. Therefore, respondents became more confident in their ability and knowledge in investing, making them influenced by over-confidence.

The risk tolerance variable has a calculated value of 0.63 < T-tabel 1.66 or a significance value of 0.53 > 0.05 so it can be concluded that risk tolerance has a positive and insignificant effect on stock investment decision-making in students of the Accounting Department of the Bali State Polytechnic. A person with a high level of risk tolerance will be more courageous when making decisions and vice versa. The results of this insignificant study show that the students of the Accounting Department of the Bali State Polytechnic are mostly averse risk averse. A risk averse is someone who tends to avoid risks whereas investors with this type will maintain a safe risk to avoid high risks. In addition, this insignificant result is because the average respondent's answer to the risk tolerance variable is neutral and disagrees while the average respondent's answer to the investment decision variable is agreed, so the risk tolerance variable has an insignificant effect on investment decisions. These results are supported by H2 results where people who have confidence will underestimate the risk.

Table 5. Significance F Test Results

ANOVA[a]						
	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	645,06	3	215,02	9,72	0,00[b]
	Residual	2255,43	102	22,11		
	Total	2900,49	105			

Source: Primary data processed, 2022

The number of samples in this study was N = 106, the number of parameters (k) = 4, then df1 = 3 and df2 = 102 at the significance level of α = 0.05 so that a F-tabel of 2.69 was obtained. Based on Table 5, it is known that the significant value in this study was 0.00 < 0.05 or the F-hitung value of 9.72 > F-tabel 2.69. So it can be concluded that the variables of herding bias, overconfidence, and risk tolerance simultaneously have a positive and significant effect on stock investment decision making in students of the Accounting Department of the Bali State Polytechnic. This suggests that there are other factors beyond research that influence an investor's investment decision. Because there are two behaviors found in investors when making investment decisions, namely rational behavior and irrational behavior. Rational behavior bases investors' investment decision-making based on common sense by considering the information available in the market and can be proven by existing data and facts. Whereas irrational behavior is that investment decision-making behavior is not based on common sense but there are other factors that influence it.

Table 6. Coefficient of Determination (R2) Test Result

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,47[a]	0,22	0,20	4,70

a. *Predictors: (Constant), Risk Tolerance* (X3), *Herding Bias* (X1), *Overconfidence* (X2)
b. *Dependent Variable*: Investment Decicions (Y)

Source: Primary data processed, 2022

The value of the coefficient of determination is between zero and one ($0 < R2 < 1$). A small R2 value means that it indicates the ability of independent variables to describe the variation of dependent variables is very limited. Based on Table 6, it is known that the value of R Square is 0.22, which means that 22% of investment decision variables can be described by the variables of herding bias, overconfidence, and risk tolerance. Meanwhile, as much as 78% can be described by other variables outside of this study. However, with the nature of R Square, which will get better by adding independent variables, it results in more and more errors

that R Square cannot explain. To support the R Square result, you can use Adj. R Square because it will take into account each addition of a variable and estimate the value of R Square for the addition of the variable.

Based on Table 6, it is known that the value of Adj. R Square is 0.20, which means that 20% of the investment decision variables can be described by the variables of herding bias, overconfidence, and risk tolerance. As much as 80% can be described by other variables outside of this study.

Conclusion

Based on the results of data analysis and discussion of research results, it can be concluded as follows: First, herding bias has a positive and insignificant effect on stock investment decisions made by students of the Accounting Department of the Bali State Polytechnic. This shows that students of the Accounting Department of Bali State Polytechnic make investment decisions based on their analysis of information that is following the reality in the market such as fundamental and technical analysis of investors. Second, overconfidence has a positive and significant effect on the decision-making of stock investment for students of the Accounting Department of the Bali State Polytechnic. This means that students of the Accounting Department of the Bali State Polytechnic have high confidence in their investment abilities and choices because they have previously attended capital market and investment courses. Third, risk tolerance has a positive and insignificant effect on the decision-making of stock investment for students of the Accounting Department of the Bali State Polytechnic. The results of this insignificant study show that the students of the Accounting Department of the Bali State Polytechnic are mostly risk averse. And fourth, herding bias, overconfidence, and risk tolerance have a positive and significant effect on stock investment decisions of students of the Accounting Department of the Bali State Polytechnic. This means that in the long term, herding bias, overconfidence, and risk tolerance have a positive and significant effect on the investment decisions of students of the Accounting Department of the Bali State Polytechnic.

The theoretical implications in this study are expected to be able to increase students' knowledge in making investment decisions because they have previously attended capital market and investment courses so that they have sufficient knowledge and skills in analyzing information both fundamentally and technically to make the right investment decisions. Meanwhile, the practical implications in this study are expected to be able to be used as a basis or reference and input on factors that influence investment decision-making. By paying attention to the factors that influence investment decision-making and increasing knowledge about stock investing, investors are expected to make rational investment decisions based on accurate information and appropriate fundamental and technical analysis.

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