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Analysis of the Effect of Overconfidence and Herding on Investor Decisions in Pontianak City

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Abstract

This study aims to analyze the effect of Overconfidence and Herding on Investor Investment Decisions in Pontianak City. The sampling technique used in this study is the purposive sampling technique. Based on the predetermined sample selection criteria, the number of samples was 40 respondents. The analytical technique used is an instrument test which includes validity and reliability tests, for the classical assumption test includes normality test, multicollinearity test and linearity test, for statistical analysis includes multiple linear regression analysis, correlation coefficient analysis (R), analysis of the coefficient of determination (R^2), simultaneous effect test (F statistic test), partial effect test (t statistical test). The results of the validity test show that the data is valid, the results of the reliability test show that the data is reliable. While the results of the normality test show that the data is normally distributed, the results of the multicollinearity test show that there is no multicollinearity and the results of the linearity test show that the model used has a linear relationship. Based on the results of multiple linear regression analysis, the regression equation obtained is Y = 2.557 + 0.318X1 + 0.056X2, the correlation coefficient analysis (R) of 0.488, the relationship between Overconfidence and Herding with Investment Decisions is quite strong. The coefficient of determination (R2) shows that 23.8% of investment decisions are influenced by overconfidence and herding and the remaining 76.2% is influenced by other variables not examined in this study. Simultaneous effect test results (F test) show that Overconfidence and Herding simultaneously have a significant effect on Investment Decisions. The partial effect test (t statistical test) shows that Overconfidence individually has an influence on Investor Investment Decisions. Meanwhile, Herding individually has no influence on Investment Decisions.

Keywords: *Overconfidence; Herding; K Break upinvestment*

Introduction

Investment is a way to get profit or income. Investment has a wide selection of investment tools, namely, stocks, bonds, warrants, and rights. One of the investment tools that are often chosen is stocks. By buying shares of a company, an investor can be said to be the owner of the company. This investment occurs because of the demand and supply among investors in the capital market.

There are psychological factors that can influence the investment decisions taken and the results to be achieved. Therefore, investment analysis that connects psychology and finance is known as behavioral finance or behavioral finance (Behavioral finance). Behavioral Finance is a science in which there is an interaction of various disciplines (interdisciplinary) and continuously integrates so that the discussion cannot be isolated. There are many factors that influence investor behavior in making investment decisions, including overconfidence and herding.

Overconfidence is self-confidence that is too excessive. Overconfidence can make investors think that they are better investors than other investors and will ignore risk. During the Covid-19 pandemic, the global market experienced a decline, one of the affected was the capital market where investors in Indonesia experienced overconfidence by taking an overly confident attitude to release their shares so as not to lose further. This was done simultaneously by investors, causing the JCI to decline.

Herding is a bias where the behavior of investors in investing follows the behavior of other investors. When herding behavior occurs, the stock price in the market does not reflect the state of the economy, so there can be errors in pricing of a stock because there is a bias in seeing the risk and expected returns. For example, during the Covid-19 pandemic, the JCI decreased. This is because investors experience herding by participating in selling shares because other investors also sell their shares.

From the previous research conducted by Setiawan, et al (2018) entitled "Cognitive Dissonance Bias, Overconfidence Bias and Herding Bias in Making Stock Investment Decisions", from the results of the tests carried out it can be concluded that Cognitive Dissonance Bias and Herding Bias have no effect on investment decisions, while Overconfidence Bias affects investment decisions.

From the previous research conducted by Afriani and Halmawati (2019) entitled "The Effect of Cognitive Dissonance Bias, Overconfidence Bias, Herding Bias on Investment Decision Making", from the results of the tests carried out it can be concluded that Cognitive Dissonance Bias and Overconfidence Bias have no significant effect on decisions investment while Herding Bias has a significant positive effect on investment decisions.

From the previous research conducted by Hardian and Adiputra (2020) entitled "The Influence of Overconfidence, Herding Effect, Self-Monitoring on Investment Decisions During the Covid-19 Pandemic", from the results of the tests carried out, it can be concluded that the influence of Overconfidence, Herding Effect, Self-Monitoring of Investment Decision.

This research involves two independent variables and one dependent variable based on the hypothesis that has been developed previously. The independent variables are Overconfidence and Herding, while the dependent variable is the investor's investment decision.

Research Methods

Type of Research

The type of research used in this study is the associative research method. Associative research in this study is to determine the relationship between overconfidence and herding on investment decisions in Pontianak City.

Data Collection Technique

Data collection techniques used in this study are primary data and secondary data. Primary data in this study were collected by distributing questionnaires. While the secondary data obtained by the technique of documentation. The documentation technique is carried out by collecting data documents on the number of stock investors obtained from the manager of the West Kalimantan BEI Representative Office, data on the 2018-2020 joint stock price index obtained from the finance.yahoo.com website.

Population and Sample

The population in this study are stock investors who invest in Pontianak City in 2020, amounting to 17,265 people. The number of samples used in this study was determined using the Slovin formula, the authors set a sample of 100 people. The sample was determined using a purposive sampling technique

Research Variable

The variables studied in this study are the independent variables (X) in this study, namely Overconfidence (X1) and Herding (X2). The dependent variable (Y) in this study is the investment decision.

Data Analysis Technique

The data analysis technique used in this research is instrument test (validity test and reliability test). Classical assumption test (normality test, multicollinearity test and linearity test). Statistical analysis (multiple linear regression analysis, correlation coefficient test (R), coefficient of determination analysis (R2), simultaneous effect test (F test), partial effect test (t test).

Results and Discussion

Instrument Test

Validity Test

After collecting the questionnaires from the respondents, then the validity test was carried out on the data obtained. Validity shows the extent to which the accuracy and accuracy of a measuring instrument in carrying out its size function. The results of the validity test of the Overconfidence statement can be seen in Table 1 below:

Table 1. Overconfidence Instrument Validity Test Results (X1 variable)

No.	Question Item	Correlation Results	Conclusion
1	X1.1	0,607	Valid
2	X1.2	0,794	Valid
3	X1.3	0,802	Valid
4	X1.4	0,832	Valid
5	X1.5	0,805	Valid
6	X1.6	0,789	Valid
7	X1.7	0,819	Valid
3	X1.3	0,802	Valid
4	X1.4	0,832	Valid

Source: Processed Data, 2021

Table 1 above shows that the results of the validity test on Overconfidence (X1) all statement items are valid because the calculated r value is 0.30. The results of the validity of the statement in the Herding variable can be seen in Table 2.

Table 2. Results of *The Vulture* Instrument Validity Test (Variable X2)

No.	Question Item	Correlation Results	Conclusion
1	X2.1	0,793	Valid
2	X2.2	0,778	Valid
3	X2.3	0,799	Valid
4	X2.4	0,692	Valid

Source: Processed Data, 2021

From Table 2 above, it shows that the results of the validity test on Herding (X2) all items are valid because the value of r count 0.30. The results of the validity of the statement in the Investment Decision variable can be seen in Table 3.

Table 3. Results of The Validity Test of Investment Decision Instruments (Variable Y)

No.	Question Item	Correlation Results	Conclusion
1	Y1.1	0,693	Valid
2	Y1.2	0,762	Valid
3	Y1.3	0,520	Valid
4	Y1.4	0,701	Valid
5	Y1.5	0,474	Valid
6	Y1.6	0,384	Valid

Source: Processed Data, 2021

From Table 3 above shows that the results of the validity test on Investor Decision (Y) all items are valid because the value of r count 0.30.

Reliability Test

Reliability test is used to determine the consistency of the groove tool, whether the measuring instrument can be relied upon for further use. The results of the reliability test in this study used the Alpha Cronbach technique. The results of the Overconfidence (X1) variable data reliability test can be seen in Table 4 below:

Table 4. *Overconfidence* Variable Reliability Test Results (Variable X1)

Reliability Statistics

Cronbach's Alpha	*N of Items*
.891	7

Source: Processed Data, 2021

Table 4 above shows that Cronbach's Alpha is 0.891, meaning that the value above is a reliability coefficient of 0.6. So it can be concluded that all statement items on the questionnaire as a measuring tool for the Overconfidence (X1) variable are reliable and consistent and reliable. The results of the Herding variable data reliability test (X2) can be seen in Table 5 below:

Table 5. *Vulture* Variable Reliability Test Results (Variable X2)

Reliability Statistics

Cronbach's Alpha	*N of Items*
.761	4

Source: Processed Data, 2021

Table 5 above shows that Cronbach's Alpha is 0.761, meaning that the value above has a reliability coefficient of 0.6. So it can be concluded that all statement items on the questionnaire as a measuring tool for the Herding variable (X2) are reliable and consistent and reliable. The results of the reliability test of the investment decision variable data (Y) can be seen in Table 6 below:

Table 6. Variable Reliability Test Results of Investment Decisions (Variable Y)

Reliability Statistics

Cronbach's Alpha	*N of Items*
.621	6

Source: Processed Data, 2021

From Table 6 above, it shows that Cronbach's Alpha is 0.621, meaning that the value above has a reliability coefficient of 0.6. So it can be concluded that all statement items on the questionnaire as a measuring instrument for the Investment Decision variable (Y) are reliable and consistent and reliable.

Classical Assumption Test

Normality Test

The normality test aims to test whether in the regression model the confounding variables or residuals are normally distributed. A good regression model should be normally distributed. Normality can be seen by using the Kolmogorov Smirnov Test (K-S). The criteria for determining normality commonly used are if the value of Sig. > 0.05 then the residual value has been normally distributed. The results of the calculation of the normality test can be seen in Table 7 below:

Table 7. Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters[a,b]	*Mean*	,0000000
	Std. Deviation	,48611492
Most Extreme Differences	*Absolute*	,058
	Positive	,046
	Negative	-,058
Test Statistic		,058
Asymp. Sig. (2-tailed)		,200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Source: Processed Data,2021

Table 7 above shows that the value of Asyamp. Sig. (2-tailed) 0.200 <0.05 means that the data is normally distributed.

Multicollinearity Test

Multicollinearity test is a test conducted to analyze the correlation between independent variables. To detect the presence or absence of multicollinearity in the regression model, it can be seen based on the tolerance value and VIF. The results of the multicollinearity test can be seen in Table 8 below.

Table 8. Multicollinearity Test Results

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2,557	,242		10,578	,000		
	X1OVERCONFIDENCE	,318	,094	,428	3,376	,001	,489	2,043
	X2HERDING	,056	,089	,080	,634	,528	,489	2,043
a. Dependent Variable: Y1 DECISION								

Source: Processed Data,2021

Based on Table 8, it shows that the independent variable has a tolerance value of 0.489 > 0.1 and a VIF value of 2.043 < 10. It can be concluded that in this model there is no multicollinearity.

Linearity Test

Linearity test is used to see whether the specifications of the model used are correct or not. The results of the calculation of the linearity test for the Overconfidence variable can be seen in Table 9 below:

Table 9. *Overconfidence* Variable Linearity Test Results on Investment Decisions

Variable (X1)

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Y1DECISION * X1OVERCONFIDENCE	Between Groups	(Combined)	11,556	22	,525	2,111	,009
		Linearity	7,224	1	7,224	29,032	,000
		Deviation from Linearity	4,331	21	,206	,829	,677
	Within Groups		19,160	77	,249		
	Total		30,716	99			

Source: Processed Data, 2021

Based on Table 9 the results of the linearity test show a linearity significance value of 0.000 <0.05. So it can be concluded that there is a linear relationship between Overconfidence and Investment Decisions. The results of the Herding variable linearity test calculation can be seen in Table 10 below:

Table 10. *Vulture* Variable Linearity Test Results on Investor Investment Decisions

Variable (X2)

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Y1DECISION * X2HERDING	Between Groups	(Combined)	7,916	13	,609	2,297	,012
		Linearity	4,573	1	4,573	17,248	,000
		Deviation from Linearity	3,343	12	,279	1,051	,411
	Within Groups		22,800	86	,265		
	Total		30,716	99			

Source: Processed Data, 2021

Based on Table 10, the linearity test results show a linearity significance value of 0.000 <0.05. So it can be concluded that there is a linear relationship between Herding and Investment Decisions.

Statistical Analysis

Multiple Linear Regression Analysis

Multiple linear regression test to calculate the quantitative effect of a change in events (variable X) on other events (variable Y). The results of the multiple regression test calculation can be seen in Table 11 below:

Table 11. Multiple Linear Regression Analysis Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,557	,242		10,578	,000
	X1OVERCONFIDENCE	,318	,094	,428	3,376	,001
	X2HERDING	,056	,089	,080	,634	,528
a. Dependent Variable: Y1DECISION						

Source: Processed Data, 2021

Based on Table 11, it can be seen that the multiple linear regression equation is as follows:

Y = 2.557 + 0.318X1 + 0.056X2

The regression equation model that can be written in the form of a regression equation is as follows: (1) The constant a value of 2.557 explains that Overconfidence and Herding are equal to zero, so the contribution to Investment Decisions is 2.557; (2) If Overconfidence increases by one unit, the effect on Investment Decisions will increase by 0.318; (3) If the Herding increases by one unit, the effect on the Investment Decision will increase by 0.056.

Analysis of Correlation Coefficient (R)

Correlation analysis was carried out in order to test the associative hypothesis, namely the relationship between variables in the population through the relationship data of variables in the sample. The results of the calculation of the correlation coefficient test can be seen in Table 12 below:

Table 12. Correlation Coefficient (R) Test Results

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,488[a]	,238	,223	,49110

a. Predictors: (Constant), X2HERDING, X1OVERCONFIDENCE
b. Dependent Variable: Y1DECISION

Source: Processed Data, 2021

From Table 12 it can be seen that the value of R (correlation) obtained is 0.488 where this value is between 0.40-0.599 this means that the relationship between Overconfidence (X1) and Herding (X2) on Investment Decisions (Y) is 0.764 which means that there is a strong enough relationship.

Analysis of the Coefficient of Determination (R2)

This test is to find out how big the contribution of the X variable to the Y variable. The results of the Coefficient of Determination Test (R2) calculation can be seen in Table 12 which states that the value of the coefficient of determination (R2) or R Square obtained is 0.238. This means that 23.8% (1 x 0.238 x 100%) the influence on Investment Decisions is explained by the Overconfidence and Herding variables, while the remaining 76.2% (1 – 0.584 x 100%) Investment Decisions are influenced by other variables that are not investigated in this study.

Simultaneous Effect Test (F Statistics Test)

Simultaneous effect test (F test) basically shows whether all independent variables included in the model have a joint effect on the dependent variable. The results of the Simultaneous Effect Test (Test F) can be seen in Table 13 below:

Table 13. Simultaneous Influence Test Results (Test F)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,321	2	3,661	15,178	,000[b]
	Residual	23,394	97	,241		
	Total	30,716	99			

a. Dependent Variable: Y1DECISION

b. Predictors: (Constant), X2HERDING, X1OVERCONFIDENCE

Source: Processed Data, 2021

From Table 13 it can be seen that together the independent variables have a significant effect on the dependent variable. This can be seen from the probability value of Sig. of 0.000 <0.05 means that the Overconfidence and Herding variables simultaneously have a significant effect on Investment Decisions.

Partial Effect Test (Test Statistical t)

Partial Influence Test (Test Statistical t) was conducted to determine the effect of each or partially the independent variable or Overconfidence and Herding on the dependent variable of Investment Decision. The results of the t-test of the two variables can be seen from Table 14.

Table 14. Partial Impact Results (Statistical Test t)

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,557	,242		10,578	,000
	X1OVERCONFIDENCE	,318	,094	,428	3,376	,001
	X2HERDING	,056	,089	,080	,634	,528
a. Dependent Variable: Y1DECISION						

Source: Processed Data, 2021

From Table 14 it can be seen that the results of the partial effect test (t test) produce the Sig value. which will be interpreted as follows: (1) The results of the t-test (partial) between the Overconfidence (X1) variable and the Investment Decision (Y) variable show the value of Sig. of 0.001 < 0.05, then the hypothesis Ha is accepted, meaning that individual overconfidence has an influence on investment decisions; (2) The results of the t-test (partial) between the Herding variable (X2) and the Investment Decision variable (Y) show the value of Sig. of 0.528 > 0.05, then the hypothesis H0 is accepted, meaning that Herding individually has no influence on investment decisions.

Conclusion

Respondents in this study are stock investors, most of whom are between 20-24 years old, male, have a bachelor's degree in education and are unmarried. Multiple linear regression equation shows that the regression equation is: Y = 2.557 + 0.318X1 + 0.056X2. The correlation coefficient (r) obtained is 0.488. So this value indicates that the relationship between Overconfidence and Herding with Investment Decisions is quite strong. If the Overconfidence (X1) and Herding (X2) variables increase, the Investment

Decision (Y) will increase. The coefficient of determination (R2) is 0.238, meaning that investment decisions are influenced by overconfidence and herding by 23.8% and the remaining 76.2% is influenced by other variables not examined in this study. Based on the results of the simultaneous influence test (F test) shows that Overconfidence and Herding simultaneously have a significant effect on Investment Decision Making. This can be seen from the value of Sig. of 0.000 < 0.05. The partial effect test (t statistical test) shows that Overconfidence individually has an influence on Investor Investment Decisions. Meanwhile, Herding individually has no influence on Investment Decisions.

Suggestion

From the conclusions above, the authors can provide some suggestions that can be used as input for the company as follows: (1) Investors are expected to pay more attention to overconfidence in making investment decisions. For investors who experience high overconfidence, it is better to reduce it so that they can become rational investors by not always focusing on profits but also being careful about risk, because overconfidence can affect investment decision making; (2) In further research, it is hoped that researchers can increase the number of variables and increase the number of respondents with more respondent characteristics.

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