The Impact Of Financial Literacy And Behavioral Bias On Investment Decisions

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ABSTRAK
Penelitian ini bertujuan untuk mengetahui dan membuktikan secara empiris Literasi Keuangan, *Overconfidence* dan *Herding Behavior* terhadap Keputusan Investasi. Sampel dalam penelitian ini adalah para pekerja di Kota Makassar, Sulawesi Selatan, Indonesia. Terdapat 135 responden yang diambil dengan menggunakan kuesioner melalui metode survei. Analisis statistik yang digunakan dalam penelitian ini adalah regresi berganda berganda. Model ini dievaluasi dengan menggunakan R-square untuk variabel dependen serta uji T dan signifikansi koefisien parameter pada jalur struktural. Hasil penelitian menemukan bahwa Literasi Keuangan berpengaruh Positif Signifikan terhadap keputusan investasi, Overconfidence berpengaruh Positif Signifikan terhadap keputusan investasi dan herding behaviour berpengaruh positif signifikan terhadap pengambilan keputusan investasi. Perkembangan hasil penelitian juga menemukan bahwa kecenderungan responden lebih memilih untuk berinvestasi dalam bentuk Aset Riil. Lebih lanjut, peneliti memberikan hasil bahwa tidak terdapat perbedaan literasi keuangan antara jenis kelamin laki-laki dan perempuan. Tidak ada perbedaan overconfidence antara jenis kelamin laki-laki dan perempuan dan ditemukan perbedaan perilaku antara jenis kelamin laki-laki dan perempuan namun tidak ada perbedaan dalam keputusan melibatkan jenis kelamin laki-laki dan perempuan.

ABSTRACT
This study aims to find out and to prove empirically the challenges of Financial Literacy, Overconfidence and Herding Behavior to Investment Decisions. The sample in this study was workers in Makassar City, South Sulawesi, Indonesia. There were 135 respondents taken using questionnaires through the survey method. The statistical analysis used in this study is multiple multiple regression. This model was evaluated using the R-square for the dependent variable as well as the T-test and the significance of the parameter coefficients on the structural path. The results found that Financial Literacy has a Significant Positive effect on investment decisions, Overconfidence has a Significant Positive effect on investment decisions and herding behaviour positive a significant effect on investment decision-making. The development of the results also found that the tendency of respondents prefers to invest in the form of Riil Assets. furthermore, the researchers gave the result that there was no difference in financial literacy between the male and female sexes. There is no difference in overconfidence between the sexes of men and women and found differences in behaviour between the sexes of men and women but there is no difference in the decision to involve the sexes of men and women.

1. INTRODUCTION

All world economies are undergoing very rapid changes due to fundamental factors such as globalization, world trade growth, and explosive international competition, which has an impact on the absence of countries that can be isolated from the current economy (Fuad et al, 2006). Growth and development of the world economy also encourages changes in existing companies, international competition that occurs results in many companies that compete with each other to improve performance, one of the ways is to make changes to capital and new business opportunities facilitated by The development of internet use, through market participation and the use of information technology as a medium to achieve the goals of these companies (Mastura et al, 2020).

The current technological development has a significant impact on the economic development of a country, encouraging the business sector to run companies more efficiently to achieve maximum results where the capital and financial market sector is indeed one of the country's economic benchmarks, and thousands They are in the secondary market or the stock market (Negara & Febrianto, 2020). According to Pajar (2017), the development of technology provides facilities for investors to be able to freely choose how to invest. This online trading facility makes it easy for investors to be able to transact wherever and whenever use devices that can access the internet so as to facilitate investors in decision making (Negara & Febrianto, 2020).

Investment decisions are defined as the process of allocating funds to acquire low-cost assets such as savings and deposits, and high-risk assets such as real estate and gold (Ariani et al., 2016) or stocks (Barber, B. M., & Odean, T, 2001); (Keller & Siegrist, 2006). With sufficient knowledge, investors are expected to be able to make the right investment selection by maximizing returns. This can be interpreted that with good financial literacy, investors will be able to make the right investment decisions to obtain the desired results.

Using financial literacy can make it easier for someone to understand and know things about finances and financial risks that might occur to avoid financial problems. An increase in one's financial knowledge can have an impact on active participation in financial-related activities. financial literacy includes awareness and knowledge of financial instruments and their applications in business and life (Huston, 2010). Financial literacy also includes several financial aspects, namely basic knowledge of personal finance, money management, credit management, savings and investments, and risk management (Mandell & Klein, 2007)

Investment decision-making needs to be done properly because investing contains long-term benefits and risks. However, it is not uncommon for investors to make irrational investment decisions. Decision-making is based on their judgments which are far from rational assumptions. When facing a risky situation, there are several objectivity, emotions, and other psychological factors that usually influence investment decisions- Investors must be vigilant in making investment decisions so as not to hurt their investment.

Several psychological variables that affect investors in their decision-making actions include overconfidence and herding behaviour. Overconfidence is confidence in judgement, cognitive abilities, rational reasoning and intellect where a person exaggerates his ability to predict and the accuracy of the information he has (Pompian, 2012). Investors who are too confident tend to underestimate risks and this can lead to less than optimal asset allocation (Dittrich, Güth, & Maciejovsky, 2005). Therefore, these investors will tend to allocate their funds to high-risk assets such as property and stocks, while less confident investors will allocate more of their funds to low-risk assets. Investors who use essential analysis are too confident, have trading frequency and are more likely to be risk takers (Hoffmann et al (2010). Overconfidence In research on the effect of overconfidence on investment decisions it was found that

overconfidence shows a significant negative effect on investment decisions (Afriani & Halmawati, 2019), whereas in other studies it has been shown that overconfidence has a significant positive effect (Addinpujoartanto & Darmawan, 2020) in line with similar research conducted which also shows overconfidence has a significant positive effect on investment decisions (Sitohang & pertiwi, 2021).

Another behavioural bias factor that can influence investment decision-making is herding behaviour. From a behavioural finance perspective, herding can be a cause of emotional irregularities. Unknowingly herding behaviour is often carried out by investors because they believe that herding can bring them profits in investing. Several studies have shown different results in that herding behaviour has a significant negative effect on research investment decisions (Putra, 2018) meanwhile, herding behaviour has a positive effect on investment decisions (Sitohang & pertiwi, 2021).

In this study, the authors further examine the effect of gender differences in decision-making in the relationship between financial literacy and behavioural biases, namely overconfidence behaviour and heading behaviour towards investment decisions. researchers believe that there are social factors that also influence financial literacy, overconfidence behaviour and herding behaviour towards investment decisions, one of which is gender differences. Men have higher confidence in their abilities than women (Mittal & Vyas, 2011). Women also tend to allocate funds for low-risk investments while men choose investments with higher risks. Research on gender proves that men are different from women when it comes to perceiving risk in the context of investment behaviour (Albaity & Rahman, 2012).

Similar research was also developed regarding gender which gave the result that male investors' herding behaviour towards investment decisions was negative and significantly significant. The results of the study state that among female investors, the effect of hearing behaviour on investment decisions is negative and statistically significant. However, the effect of overconfidence does not statistically significantly affect financial investment decisions (Adil *et.al*, 2020).

2. RESEARCH METHODS

This type of research is explanatory research, with a quantitative approach using survey methods. This type of research is appropriate because it aims to describe the characteristics of a sample from a population (Groves et al., 2004). This study involved 135 workers in the city of Makassar who had made investment decisions. The sampling technique in this study was convenience sampling and purposive sampling. Convenience sampling is a sampling method where the research object is easily accessible and purposive sampling is a sampling method based on criteria related to the research objective. This study used primary data, which was taken using a questionnaire obtained directly through a field survey using the online google form questionnaire technique as the data collection technique. The instruments in this study will measure aspects of financial literacy, overconfidence, and herding behaviour in investment decisions.

3. RESULTS AND DISCUSSION

Profil Responden
Based on the collected respondent data, it was obtained that the number of respondents was 135 respondents with the criteria of being domiciled in the city of Makassar, having a steady income and having made investments.
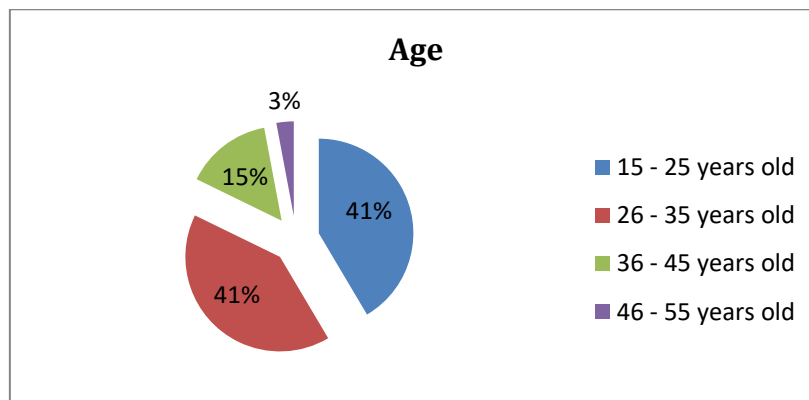
1. **Respondents Based on Gender**
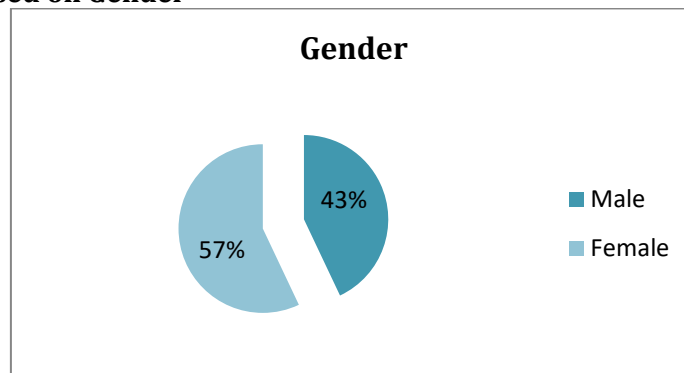
Picture 1. Respondents Based on Gender

The majority of respondents encountered were women, namely as much as 77 people or 57% compared to male respondents as much as 58 people or 43%.
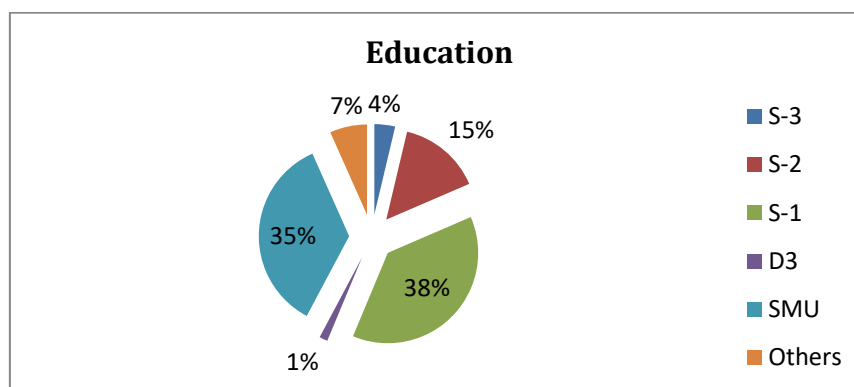
2. **Respondent By Age**

Picture 2. Respondent By Age

The majority of respondents who were found were in the age range of 15-25 years and at the age of 26-35 years. This also explained that the respondents were in the productive age range.
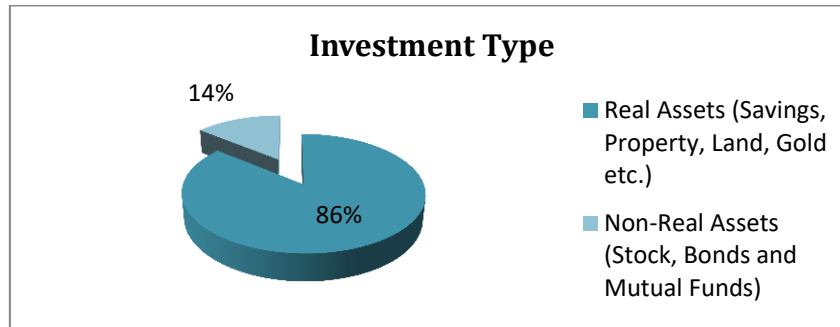
3. **Responden Based on Education Level**

Picture 3. Respondent Based on Education Level

The majority of respondents who were found were at the S-1 level of education. This explained that the majority of respondents already had the knowledge and were able to think logically.

4. Respondent based on Investment Type

Picture 4. Respondent Investment Type

The majority of respondents prefer to invest in real assets such as savings, property, land, gold, etc. This condition can be indicated that respondents as investors prefer investing in real assets. Respondents are still more dominant and think that investments in the form of land, deposits, buildings or houses, gold or jewellery, are considered much safer as investment products for future security.

5. Respondent based on receipt of information on financial management

Table 1. Responden receipt of information on financial management

Information	Amont (N=135)	Persentase
Yes	102	76%
No	33	24%

The majority of respondents have received information about financial management or financial instruments (savings, deposits, stocks, mutual funds, bonds, etc.). So that they already have basic knowledge of financial management.

6. Respondent based on Investment Length

Table 2. Responden Investment Length

Investment duration	Amount (N=135)	Persentase
< 1 Year	65	48%
> 1 Year	70	52%

The majority of respondents have invested more than one year. These results explain that respondents have experience in the world of investment and know investment products. explained that the majority of respondents were long-term investors, more than 1 year.

7. Respondent based on Interested investment

Table 3. Respondent based on Interested Investment

Type of investment	Amount (N=135)	Persentase
Tabungan / Deposito	40	30%
Property (Tanah, Bangunan dll)	37	27%
Emas	36	27%
Saham	15	11%
Obligasi	1	1%
Reksadana	2	1%

The majority of respondents have invested in savings/deposits. These results explain that respondents prefer to invest with small and safe capital and risk. Respondents are very avoided losses. Most respondents are very careful in allocating funds and avoiding assets that have the potential to cause losses such as mutual funds and bonds.

Regression and Assumption Test

1. Normalitas test

The results of the normality test using the P-P plot are as follows :
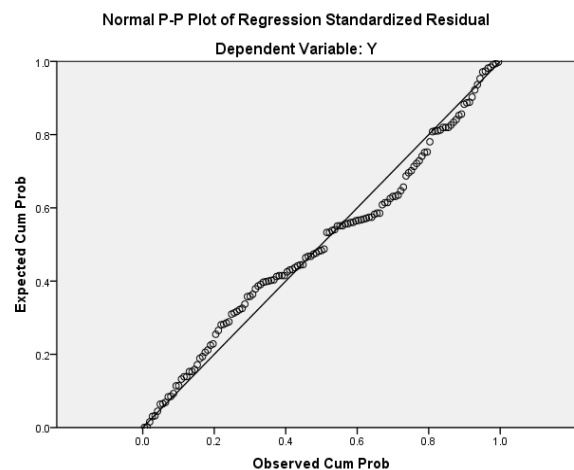
Picture 5. Normality Test Results using the P-P Plot

Based on normal P-P plots. Indicates that the points are close to the diagonal line. Therefore, the residual data is normally distributed. So it can be concluded that the data normality assumption test has been fulfilled.

2. Outlier Test

Table 4. Outlier Test Result
Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	24.07	32.75	28.00	1.814	135
Residual	-8.090	7.214	.000	2.436	135
Std. Predicted Value	-2.166	2.618	.000	1.000	135
Std. Residual	-3.284	2.928	.000	.989	135
a. Dependent Variable: Y					

The standard residual value indicates in the interval ± 3.3 This means that the data does not have a problem of extreme values (outliers)

3. Uji Liniearitas Test Results

Partial Regression Plot
Dependent Variable: Y
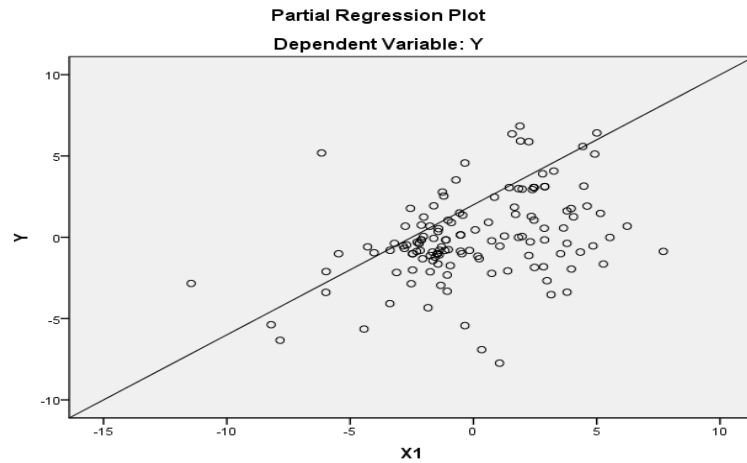
The picture above shows the relationship between the independent variable and the dependent variable there is a linear straight line.

4. Homoskedastisitas Test Results

Scatterplot
Dependent Variable: Y
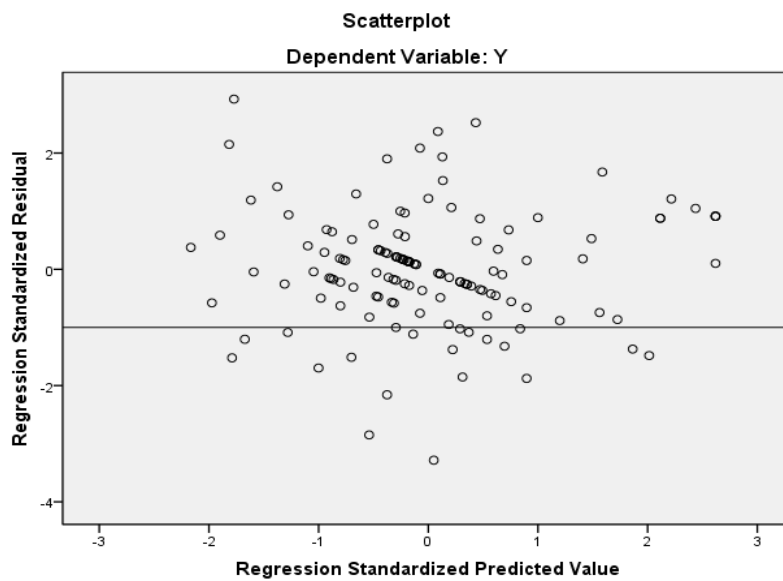
Picture 8. Homoskedastisitas Test Results

Shows that there is a consistent pattern between the independent variables and the dependent variable.

5. Multicollinearity Test

Table 5. Multicollinearity Test result

Tolerance	VIF
0.790	1.266
0.724	1.382
0.862	1.160

Because the tolerance value of the three independent variables is > 0.1 or the VIF value is < 10, the three independent variables are not correlated with each other, meaning that they are free of multicollinearity.

6. **Autocorrelation Test**

Table 6. Autocorrelation Test Results
Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.518[a]	.269	.263	2.607	
2	.573[b]	.328	.318	2.508	
3	.597[c]	.357	.342	2.464	1.625
a. Predictors: (Constant), X1					
b. Predictors: (Constant), X1, X2					
c. Predictors: (Constant), X1, X2, X3					
d. Dependent Variable: Y					

Because based on the Durbin-Watson value of 1,625. This shows that the value is in the range between 1.5-2.5, so it can be assumed that there are no problems or that the predicted value is not related to other predictions.

Correlation and Regression Analysis

Table 7. Regression Models

Model		Variables Entered	Variables Removed	Method
Dimension 0	1	X1	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
	2	X2	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
	3	X3	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
a. Dependent Variable: Y				

All three independent variables/forecasters were included in the regression model at $p < 0.05$. This shows that the three variables are predictors of investment decisions.

Correlation And Coefficient Of Determination

Table 8. Correlation and coefficient of determination
Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.518[a]	.269	.263	2.607
2	.573[b]	.328	.318	2.508
3	.597[c]	.357	.342	2.464

a. Predictors: (Constant), X1
b. Predictors: (Constant), X1, X2
c. Predictors: (Constant), X1, X2, X3

Model 1 : shows that financial literacy (X1) contributes R2 = 26.9% to investment decisions (Y)
Model 2 : shows that financial literacy (X1) and Overconfidence (X2) contribute R2 = 31.8% to investment decisions (Y)
Model 3 : shows that financial literacy (X1), Overconfidence (X2) and Herding Behavior (X3) contribute r (0.597) or 34.2% to investment decisions (Y)

Regression Model Equations

Table 9. ANOVA Test Results
ANOVA[d]

	Model	Sum of Squares	df	Mean Square	F	Sig.
3	Regression	440.843	3	146.948	24.209	**.000[c]**
	Residual	795.157	131	6.070		
	Total	1236.000	134			

d. Dependent Variable : Y

Based on the ANOVA table, shows that the equation model or the three independent variables/predictors is significant in influencing the dependent variable (F = 24.209; p <0.05).

Table 10. Coefficients Test Results
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.998	2.172		4.603	.000
	X1	.329	.068	.380	4.813	.000
	X2	.297	.114	.214	2.592	.011
	X3	.183	.076	.182	2.416	.017

a. Dependent Variable: Y
b. X1 = Finance Literasi'
c. X2 = Overconfidence
d. X3 = Behavior

Regression Equation

Investment Decision (Y) = 9.998 + 0.329 Financial Literacy (X1) + 0.297 Overconfidence (X2) + Herding 0.183 Behavior (X3)
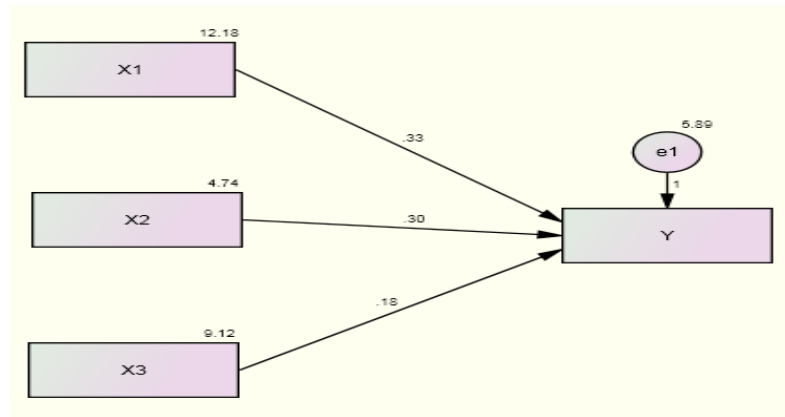
Picture 9. Regression Equation Model

Hypothesis Test Results

1. Testing the effect of financial literacy on investment decisions from calculations with the statistical t-test obtained a significant value of 0.000 <0.05. This states that financial literacy has a positive and significant influence on investment decision-making. This effect indicates that if the financial literacy of an investor increases, it will increase the ability to make investment decisions. So that H1 in this study is accepted.
2. The model estimation results for overconfidence show that H3 is accepted. This can be proven by the coefficient value shown by the overconfidence variable which has a positive value with a significance level of 0.011 <0.05. This means that overconfidence has a significant positive effect on investment decision-making. The higher the level of excessive trust, the higher the level of investment decision-making.
3. The herding behaviour variable has a significant positive effect on investment decisions, with a significance level of 0.017 <0.05. so that there is a significant positive effect. Then H5 is acceptable because herding behaviour has a positive influence on investment decisions.
4. Based on the table above, it shows that financial literacy (β = 0.380; t = 4.813; p < 0.05), Overconfidence (β = 0.214; t = 2.592; p < 0.05), and Behavior (β = 0.182; t = 2.416; p < 0.05) is a factor influencing investment decisions among investors. The three predictor variables are financial literacy, overconfidence and behavior to reserve as much as 34.2% of investment decisions (Y).

Difference Analysis Deskriptif

Table 11. Results of the Analysis of Gender Differences Group Statistics
Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
X1	Male	58	34.22	3.889	.511
	Female	77	33.38	3.158	.360
X2	Male	58	15.67	2.327	.306
	Female	77	15.09	2.053	.234
X3	Male	58	13.95	3.057	.401

	Female	77	12.01	2.751	.313
Y	Male	58	28.38	3.371	.443
	Female	77	27.71	2.748	.313

Table 12. Results of the Analysis of Differences in Gender Independent Samples Test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
X1	Equal variances assumed	3.706	.056	1.397	133	.165	.848	.607	-.353	2.048
	Equal variances not assumed			1.357	107.755	.178	.848	.625	-.391	2.086
X2	Equal variances assumed	.195	.659	1.538	133	.126	.582	.378	-.166	1.329
	Equal variances not assumed			1.511	114.022	.134	.582	.385	-.181	1.344
X3	Equal variances assumed	1.526	.219	3.857	133	.000	1.935	.502	.943	2.928
	Equal variances not assumed			3.800	115.490	.000	1.935	.509	.926	2.944
Y	Equal variances assumed	1.446	.231	1.262	133	.209	.665	.527	-.377	1.707
	Equal variances not assumed			1.227	108.033	.223	.665	.542	-.410	1.740

1. For the results of hypothesis testing H2 There is no difference in financial literacy between male and female sexes (F = 3.706; t = 1.397; p > 0.05), H4 There is no difference in overconfidence between male and female sexes (F = 1.195; t = 1.538; p > 0.05) and H6 There is a difference in behaviour between male and female sexes (F = 1.526; t = 3.857; p < 0.05)
2. There is no difference in investment decisions between male and female genders (F = 1.446; t = 1.262; p > 0.05)

4. CONCLUSIONS

The purpose of this study is to find out and prove empirically the challenges of financial literacy, overconfidence and herding behavior towards investment decisions. Based on the results of the study it can be concluded that financial literacy has a significant and positive effect on investment decision making. This means that the higher the level of one's financial literacy, the higher the accuracy of investment decision making. These results are similar to the results of research conducted by Jappelli (2009) and Baihaqqy et al (2020) which shows that financial literacy has a very positive effect on investment decisions. This shows that financial literacy consistently has an influence on investment decisions

Overconfidence behavior is also found with the same positive and significant results that explain that the higher the overconfident behavior, the higher the desire of a person in making investment decisions. High overconfidence behavior is influenced by the feelings of investors who feel confident in the success of an investment plan and is able to identify shares that can provide good performance in the future, this is because investors feel they have good investment performance history and have better investment skills than most Other investors, so that the investor is more confident in making investment decisions. This is supported by research by Addinpujoartanto & Darmawan (2020), Dewi & Pertiwi (2021) and Sihotang &

Pertiwi (2021) with the same result, namely overconfidence has a significant positive effect on investment decisions

This study also shows that herding behavior has a significant positive effect on investment decision making, which explains that the higher the herding behavior, the higher the people's desire to invest. According to Bikhchandani and Sharma (2001), Herding Behavior is a decision taken by an investor intentionally to imitate the decision of other investors. This is supported by research conducted by Fridana and Assandimitra (2020) and Sihotang & Pertiwi (2021) with the same results, namely herding behavior positively effecting on investment decisions. Further research in this study tests the effect of gender and found that there is no difference between male and female financial literacy, there is also no difference in overconfident behavior between men and women, but there are differences in herding behavior between men and women. male and female.

5. SUGGESTIONS

From this study it was found that people tend to invest in real assets with low risk and with low returns, this is because they are still concerned about investments that are considered unsafe if they save their funds in non-real asset investments. People tend to avoid risk in investing. This is expected to be input for investment advisers to help determine the characteristics of customers, especially those related to risk, and identify possible behavioural biases that customers may experience so that they can direct customers properly in allocating their funds. own funds. For further research, the researcher should separate the research model based on region and gender because each group may have different characteristics and add alternative investment options besides savings, deposits, housing, land and gold.

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