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Financial Literacy, Risk Perception, Overconfidence Moderated by Financial Education on Investment Decisions

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Abstract

This study aims to determine: effect of financial literacy on investment decision making; effect of risk perception on investment decision making; effect of overconfidence on investment decision making; effect of financial education on strengthening financial literacy and risk perception on Investation decision. This research uses quantitative type with investors in Surakarta as population. The sample of 160 was taken using a non probably sampling technique. Data collection techniques used a questionnaire with a Likert scale of 1-5 points and a dummy variable with a value of 0 or 1, distributed via Google form. Validity test using Confirmatory Factor Analysis (CFA) and reliability test using Cronbach Alpha. The hypothesis was tested through Hierarchical Regression after a descriptive statistical test and classic assumption test were performed. The data were processed using SPSS 25 software. The results of the study proved that (1) there was a significant positive effect of financial literacy on investment decision making; (2) there was a significant positive effect on perceived risk on investment decision making; (3) there was a significant negative effect of overconfidence on investment decision making; and (4) financial education moderates financial literacy, risk perception, and overconfidence in investment decision making.

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INTRODUCTION

Current technological developments encourage people to access information and help provide additional insight into financial management. Access to financial information related to investment has begun to be accessible to the people of Indonesia. Investment is a form of participation or funding with the hope of obtaining profits in the future (Adnyna, 2020). Investment aims to obtain economic benefits from invested capital within a certain period of time (Hidayat, 2019).

Investment decisions need to be taken with careful consideration because investment is a high-risk capital allocation. Investment is capital that will produce profits in the future which is full of uncertainty, or in the management concept it is called investment risk so that in making decisions you need to go through careful evaluation, estimate the level of profit, and take risks (Hidayat, 2019). In accordance with Virlics (2013) that risk analysis on investments needs to be done because of the risks and uncertainties that always exist in investments.

Making the right decision is very necessary in investing in order to obtain the expected profit. Investors' knowledge of finance will help them in determining the right investment decisions, according to Raut's (2020) research, financial literacy helps investors to develop thinking in making decisions and making rational assessments. Financial literacy plays an important role in making investment decisions, so that investors who have knowledge of financial terms and capital market behavior and access to information will have more rational thinking in making decisions.

Based on OJK survey conducted in 2019, in the capital markets sector, the level of financial literacy 2016 was 4.40%, while in 2019 it was 4.92%. There has been an increase but it is still relatively low compared to other financial services sectors such as banking, insurance, pension funds, and so on. Low financial literacy will make investors easily influenced and vulnerable to fraud in the investment process. This is similar with the opinion of Al-Tamimi and Kalli (2009) that online investors must have more knowledge in order to be successful in the securities market, because there is a lot of misinformation regarding finances and manipulation carried out by irresponsible parties.

Research on financial literacy on decision making by (Adil et al., 2022; Aren & Zengin, 2016; Raut, 2020) has a significant influence on decision making by investors. This is different from research (Ademola et al., 2019; Al-Tamimi & Kalli, 2009) which states that financial literacy does not have a significant effect on investment decision making. Based on the results of this study, there is a research gap regarding the effect of financial literacy on investment decisions.

Apart from being influenced by financial literacy, investor decision making is also influenced by the risks. Investment aims to gain profits in the future so it is necessary to consider the risks taken before investing. The risk taken by each investor is different because it is influenced by risk perception which is defined as the uncertainty that can be faced when predicting the consequences in decision making (Mahwan, 2021). This should be taken into consideration when making investment decisions in order to get the desired return, in line with research by Aren and Zengin (2016) that risk perception is important in making financial decisions and will influence investors' choices in investing.

Previous research on the relationship between risk perception and investment decisions has a significant positive effect on investment decisions (Mahwan, 2021; Nguyen et al., 2017). Meanwhile, research conducted (Areiqat et al., 2019; Rosyidah & Lestari, 2013) states that risk perception does not have a significant influence on investment decisions. This shows that there are differences in research results regarding the relationship between risk perception and investment decisions.

Decisions taken in investing must be based on reasonable (rational) actions, but

there are also those who make decisions beyond reason (irrational). This irrational attitude is influenced by psychological factors of investors which involve emotions, preferences, traits and various things that are inherent in humans, thus making humans act irrationally in decision making (Budiarto & Susanti, 2017). This can influence investment choices due to deviations or biases, so that an investor will ignore existing information or facts.

Overconfidence is related to self-attribution bias, namely the individual's tendency to succeed with his own abilities and blame bad luck for the failures experienced, as well as making individuals exaggerate their talents (Bakar & Yi, 2016). Overconfidence is also defined as a feeling of excessive self-confidence in one's abilities in making investments (Budiarto & Susanti, 2017). The higher the level of investor overconfidence, the more likely they are to trade frequently, but if they have a low level of overconfidence, they will be more careful in making decisions.

Research on overconfidence and investment decisions, such as that conducted by Ahmad & Shah (2020), shows that overconfidence influences investment decisions. In line with research by Bakar & Yi (2016) that overconfidence has a significant effect on investment decisions. However, this is different from research conducted by Wulandari & Iramani (2014) which shows that overconfidence has no effect on investment decisions.

Understanding financial products is closely related to financial literacy which can improve financial management skills, this will be needed in making investment decisions. Low financial literacy skills are directly related to low levels of financial education (Morris and Koffi, 2015). This explains that financial education has an effect on increasing a person's financial literacy, so that later they can provide more knowledge about investment and increase understanding of risk perception and reduce overconfidence. This research wants to prove whether financial education can moderate financial literacy, risk perception and overconfidence in investment decision making.

Based on differences in research results regarding financial literacy, risk perception, overconfidence in investment decisions, research will be carried out by adding financial education as a moderating variable. This research wants to test whether financial education strengthens or weakens the relationship between financial literacy, risk perception and overconfidence in decision making. The theory used in this research is prospect theory from Tversky and Kahneman (1981) as a basic theory for answering investor problems in decision making. This theory assumes that decision making is influenced by psychological bias and risk.

METHODS

This research uses a quantitative type, collecting data through survey methods. This research uses investor subjects in the city of Surakarta by distributing questionnaires containing questions according to variable indicators via Google Forms. This study took samples using the sample calculation formula from Hair because the total population is unknown (infinite population), which is 5-10 times the variable indicator. The author then chose 10 times from these indicators, so that 10×16 = 160 was obtained. So the sample size used was 160. A sample size of 160 is expected to meet the maximum likelihood limit (MLE), namely 100-200 (Ghozali, 2016; Hair, Black, Babin, et al., 2006). This study used non-probability sampling technique. It did not give the entire population the same opportunity as the research sample. This study limits the criteria of respondents as follows: Investors domiciled in Surakarta; have made a minimum investment transaction of Rp. 500,000; make transactions within the last six months.

The dummy variable with a value of 0 or 1 used to measure financial literacy and financial education. Likert scales 1-5 point used to measure the answers of variable risk

perception, overconfidence, and investment decision with the scale "strongly disagree" to "strongly agree". Financial literacy indicators are based on Lusardi (2019), where measuring financial literacy uses the concept of The Big Three: (1) Understanding the calculation of interest rates and compound interest rates; (2) understanding of inflation; (3) understanding of risk diversification. Then indicators of risk perception use Nguyen, Gallery, and Newton (2017) as follows: (1) product performance trust; (2) understanding of investment products; (3) profit and loss opportunities, individual beliefs regarding the advantages and disadvantages of the product being invested; (4) unpredictable performance, beliefs about the difficulty of predicting product performance during the investment period. Furthermore, according Ahmad & Shah (2022) which uses three scales to measure overconfidence: over-precision, investors are too confident in their judgment and ignore the risk factors associated with investment decisions; over-placement, individuals think they are better than other people; overestimation, individuals only focus on their abilities and believe in the quality of their work performance more than actual performance.

Meanwhile, the indicators used to measure investment decisions in this study are based on Al-Tamimi & Kalli (2009), namely: (1) self-image/company image; (2) accountant information; (3) neutral information; (4) advocacy information; 5) personal financial needs. The measurement of financial education uses the study of Wagner (2019), whether individuals receive financial education or not.

The data analysis techniques used validity Confirmatory Factor Analysis (CFA) and reliability tests to test research instruments. Previously, the validity of the instrument had been tested on 70 respondents who were outside the sample in the population used for the research. The KMO-MSA value is 0.677 where the value is >0.50. The p-value in Barlett's Test of Sphericity is 0.000 or <0.05, so it can be concluded that the variables tested have a significant correlation. After the Anti Image Correlation test was carried out, the Anti Image Correlation value was > 0.5 so that it could be concluded that the Assumption of Measure of Sampling Adequacy was fulfilled. Based on the SPSS output, there are 13 items with a value of <0.65, so that the other 22 statement items are declared valid because they have a factor loading value of >0.65. From 22 statement items are reliabel after test it with reability test all variables have a value Cronbach alpha > 0.70 so it can be assumed that the variable are reliable. The hypothesis testing used the coefficient of determination, t test, and R Square test using SPSS. Here's the hierarchical regression analysis equation:

$I = \alpha + \beta1.FL + e$

$I = \alpha + \beta1.FL + \beta2.PR + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.\ EDU + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.\ EDU + \beta5.FL*EDU + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.\ EDU + \beta5.FL*EDU + \beta6.PR*EDU + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.EDU + \beta5.FL*EDU + \beta6.PR*EDU + \beta7.O*EDU + e$

$I = \alpha + \beta1.FL + k + e$

$I = \alpha + \beta1.FL + \beta2.PR + k + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + k + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.\ EDU + k + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.\ EDU + \beta5.FL*EDU + k + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.\ EDU + \beta5.FL*EDU + \beta6.PR*EDU + k + e$

$I = \alpha + \beta1.FL + \beta2.PR + \beta3.O + \beta4.\ EDU + \beta5.FL*EDU + \beta6.PR*EDU + \beta7.O*EDU + k + e$

Information:

I = Investment Decision (Y)
α = Constant
e = Error
β = Regression Coefficient
FL = financial literacy (X1)
PR = Risk Perception (X2)
O = Overconfidence (X3)
EDU = Financial education (Z)
k = Control Variables (education, income, and investment experience)

RESULTS AND DISCUSSION

The scope of this research is limited to the variables studied, namely financial literacy, risk perception, overconfidence, and financial education on investment decisions among Surakarta investors. Then to test the prerequisites or classic assumptions which include normality, multicollinearity and heteroscedasticity tests that the data is normally distributed with the value of Asymp Sig. 0,2>0,05 can be seen in Table 1, free from symptoms of multicollinearity with the tolerance values for the variables financial literacy (X1), risk perception (X2), overconfidence (X3), and financial education (Z) are 0.954, 0.988, 0.955, and 0.988 where the values are ≥0.1. The VIF values for the variables financial literacy (X1), risk perception (X2), overconfidence (X3), and financial education (Z) are 1.048, 1.013, 1.047, and 1.012 with a value of ≤10. The author also tested the control variables of current education (K1), income (K2), and investment experience (K3) showing a VIF value of <10.00 and a Tolerance value of >0.10. you cn see in Table 2, there are no heteroscedasticity problems in this research model because the dots in the scatterplot are spreading, look at the Figure 1.

Table 1. One Sampel Kolmogrov-Smirnov Normality Test

One-Sampel Kolmogrov-Smirnov Test		
		Unstandardized Residual
N		160
Normal Parameters[a.b]	Mean	0.0000000
	Std. Deviation	0.69486832
Most Extreme Differences	Absolute	0.054
	Positive	0.050
	Negative	-0.054
Test Statistic		0.054
Asymp. Sig. (2-tailed)		0.200[c. d]

Source: Processed Primary Data, 2023

Table 2. Multikollinerity Test

Variable	Collinearity Statistic		Notes
	Tolerance	VIF	
X1	0.954	1.048	There is no muticol-linearity
X2	0.988	1.013	There is no muticol-linearity
X3	0.955	1.047	There is no muticol-linearity
Z	0.988	1.012	There is no muticol-linearity
K1	0.712	1.405	There is no muticol-linearity
K2	0.711	1.407	There is no muticol-linearity
K3	0.790	1.265	There is no muticol-linearity

Source: Processed Primary Data, 2023

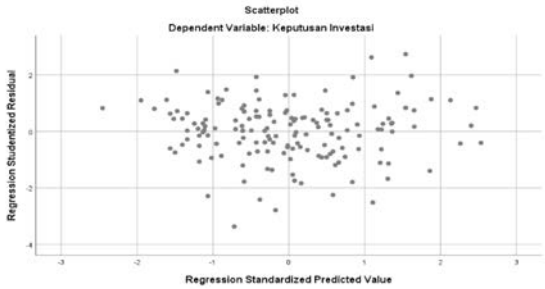

Figure 1. Scatterplot of Heteroscedasticity Test

The condition for the dependent variable is said to have an effect on the independent variable if the significance level is <0.05 because the significance level in this research is 5%. Another requirement is the t test by comparing tcount>ttable. The t table value is calculated using the TINV formula in Microsoft Excel so that the ttable used in Model 1 (df=160-1-1), Model 2 (df=160-2-1), Model 3

(df=160-3 -1), Model 4 (df=160-4-1), Model 5 (df=160-5-1), Model 6 (df=160-6-1), Model 7 (df=160-7-1), Model 8 (df=160-4-1), Model 9 (df=160-5-1), Model 10 (df=160-6-1), Model 11 (df=160-7-1), Model 12 (df =160-8-1), Model 13 (df=160-9-1), Model 14 (df=160-10-1) is 1.9760.

Table 3. Hierarchical Regression Analysis Test Results Before Adding Control Variables

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Main Variable							
Financial Literacy (X1)	0.694*** (4.881)	0.627*** (4.851)	0.772*** (6.610)	0.809*** (7.848)	0.296 (1.110)	0.376 (1.477)	0.499** (2.000)
Risk Perception (X2)	-	0.242*** (5.954)	0.253*** (7.003)	0.242*** (7.589)	0.241*** (7.628)	0.062 (1.786)	0.079** (1.985)
Overconfidence (X3)	-	-	-0.107*** (-6.579)	-0.100*** (-6.933)	-0.102*** (-7.147)	-0.100*** (-7.353)	-0.202*** (-5.990)
Financial Education (Z)	-	-	-	0.217*** (6.785)	0.104 (0.351)	1.654*** (4.093)	2.222*** (5.186)
Interaction Variable							
XI*Z	-	-	-	-	0.104** (2.078)	0.085 (1.777)	0.093** (1.995)
X2*Z	-	-	-	-	-	0.063*** (4.180)	0.061*** (4.182)
X3*Z	-	-	-	-	-	-	0.022** (3.278)
Constanta	28.861	22.677	25.415	24.402	25.808	33.472	36.060
N	160	160	160	160	160	160	160
R	0.362[a]	0.539[a]	0.667[a]	0.756[a]	0.764[a]	0.791[a]	0.807[a]
R^2	0.131	0.291	0.345	0.352	0.374	0.416	0.451
ΔR	0	0.16	0.054	0.007	0.022	0.042	0.035

Notes: *** p < 0.001; ** p < 0.05
Source: Processed Primary Data, 2023

Table 4. Hierarchical Regression Analysis Test Results After Adding Control Variables

Variabel	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Main Variable							
Financial Literacy (X1)	0.581*** (4.065)	0.534*** (4.110)	0.681*** (5.785)	0.718*** (6.950)	0.166 (0.633)	0.237 (1.241)	0.367** (1.981)
Risk Perception(X2)	-	0.233*** (5.882)	0.245*** (6.949)	0.235*** (7.600)	0.233*** (7.640)	0.135 (0.957)	0.349** (1.977)
Overconfidence (X3)	-	-	-0.103*** (-6.461)	-0.097*** (-6.947)	-0.100*** (-7.204)	-0.098*** (-7.405)	-0.205*** (-6.294)

Variable	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Financial Education (Z)	-	-	-	0.215*** (6.886)	0.064 (0.506)	1.497*** (3.745)	2.073*** (4.946)
Interaction Variable							
XI*Z	-	-	-	-	0.111** (2.287)	0.392** (2.047)	0.162** (1.985)
X2*Z	-	-	-	-	-	0.056*** (3.745)	0.053*** (3.696)
X3*Z	-	-	-	-	-	-	0.023** (3.556)
Control Variable							
Last Education (K1)	0.428 (1.891)	0.416** (2.024)	0.413** (2.262)	0.484** (3.021)	0.468** (3.077)	0.392** (2.553)	0.420** (2.830)
Income (K2)	0.031 (0.217)	0.016 (0.127)	0.014 (0.122)	0.000 (0.005)	0.025 (0.253)	0.069 (0.710)	0.054 (0.575)
Investment Experience (K3)	0.252 (1.932)	0.236** (1.997)	0.170 (1.611)	0.061 (0.647)	0.047 (0.501)	0.018 (0.202)	0.030 (0.342)
Constanta	26.931	21.153	23.865	22.798	24.271	31.375	33.914
N	160	160	160	160	160	160	160
R	0.447[a]	0.589[a]	0.698[a]	0.780[a]	0.789[a]	0.809[a]	0.825[a]
R^2	0.200	0.347	0.387	0.409	0.422	0.454	0.481
ΔR	0	0.147	0.04	0.022	0.013	0.032	0.027

Notes: *** p < 0.001; ** p < 0.05
Source: Processed Primary Data, 2023

The Result of Financial Literacy on Investment Decision

The results of the t-test variable financial literacy on investment decisions (Y) before adding the control variable can be seen in Model 1 Table 3 and after adding the control variable in Model 8 Table 4, the tvalue is 4.881 and 4,065 the Sig value 0.000 and 0.000. Based on the results of tcount>ttable (4.881>1.9760 and 4.065>1.9760) the value of Sig. <0.05 (0.000<0.05 and 0.000<0.05) so the financial literacy variable (X1) has a positive and significant effect on investment decisions (Y). The results are concluded, Ho is rejected and Ha is accepted. The effect of financial literacy (X1) on investment decisions (Y) before adding the control variable in Model 1 Table 3 shows an R2 value of 0.131 or 13.1%. It can be concluded that investment decisions are 13.1% influenced by financial literacy. After adding the control variable to Model 8 Table 4, the value of R2 increases to 0.200 or 20%. It can be concluded that investment decision making is influenced by financial literacy and the control variable is education, income and investment experience by 20%. The R2 value of the financial literacy variable after adding the control variable is higher, meaning that the impact of financial behavior is greater when considering the control variables in this study. The effect of the interaction variable between financial education and financial literacy in Model 5 of Table 3 before providing the control variables shows an R2 value of 0.374 or 37.4%. It can be concluded that the interaction variables of financial education and financial literacy have an impact of 37.4% on investment decisions. After adding the control variables in Model 12 Table 4, the R2 value increased to 0.422 or 42.2%.

The results of this study are in accordance with Adil et al. (2022); Aren & Zengin (2016); Raut (2020), financial literacy has a significant influence on decision makingby investors. This proves that financial literacy not only helps investors determine their way of thinking in making investment decisions, but also makes investors confident in showing rational and accurate judgments. If investors have more knowledge of financial terms and the stock market, they will make decisions looking at stock fundamentals rather than environmental impact. This explains that a good level of financial literacy means that investors have high insight regarding the stock market, which can reduce the occurrence of cases of fraud related to shares.

The Result of Risk Perception on Investment Decision

The results of the t test for the risk perception variable on investment decisions (Y) before adding the control variable can be seen in Model 2 Table 3 and after adding the control variable Model 9 Table 4, the tvalue is 5.945 and 5,882 the Sig value are 0.000 and 0.000. Based on the results of tcount>ttable (5.945>1.9760 and 5.882>1.9760) and Sig. <0.05 (0.000<0.05 and 0.000<0.05) then the risk perception variable (X2) has a positive and significant influence on investment decisions (Y). The results concluded that Ho was rejected and Ha was accepted. The effect of perceived risk (X2) on investment decisions (Y) before adding control variables to Model 2 Table 3 shows an R2 value of 0.291 or 29.1%. It can be concluded that 29.1% of investment decisions are influenced by risk perception. After adding the control variables to Model 9 Table 4, the R2 value increases to 0.347 or 34.7%. The effect of the interaction variable between financial education and risk perception in Model 6 of Table 3 before providing the control variables shows an R2 value of 0.416 or 41.6%. it can be concluded, the interaction variables of financial education and perceived risk have an impact of 41.6% on investment decisions. After adding the control variable to Model 13 Table 4, the value of R2 increases to 0.454 or 45.4%.

The results of this study indicate that there is a significant positive influence of risk perception on investment decision making by investors in Surakarta. This research is in accordance with Mahwan (2021); Nguyen et al. (2017), perceived risk influences investment decision making. Perceived risk causes uncertainty in making investment decisions. Individuals with a high level of perceived risk will place their funds in capital market instruments, this is consistent with the results of the respondents in this study, who on average are risk seekers as seen from the total points of high risk perception statements. Understanding of risk perception will influence individuals in decision making. the better the understanding of ownership risk, the better the investment decisions taken, so as to minimize the risk received.

The Result of Overconfidence on Investment Decision

The results of the t test for the overconfidence variable on investment decisions (Y) before adding the control variables can be seen in Model 3 Table 3 and after adding the control variables in Model 10 Table 4, the t value is -6.579 and -6.461. The negative sign on tcount does not mean the value is below 0, the negative sign means the direction of the impact is negative or opposite. The tcount value is only taken for its absolute value or absolute value, which means that the value in the negative or opposite direction is higher than ttable (|-6.579| > 1.9760 and |-6.461| > 1.9760). Sig value. <0.05 i.e. 0.000 (0.000<0.05 and 0.000<0.05). The results are concluded, Ho is rejected and Ha is accepted. The effect of overconfidence (X3) on investment decisions (Y) before adding the control variable in Model 3 Table 3 shows an R2 value of 0.345 or 34.5%. It can be concluded that investment decisions of 34.5% are influenced by overconfidence. After adding the control variable to Model 10 Table 4, the value of R2 increases to 0.387 or 38.7%. The effect of the interacti-

on variable between financial education and overconfidence in Model 7 Table 3 before providing the control variables shows an R2 value of 0.451 or 45.1%. It can be concluded that the interaction variables of financial education and overconfidence have an impact of 45.1% on investment decisions. After adding the control variables in Model 14 Table 4, the R2 value increased to 0.481 or 48.1%.

The results of the study show that there is a significant negative effect of overconfidence on investment decision making by investors in Surakarta City. This research is in line with Kafayat (2014); Ahmad & Syah (2022); Bakar & Yi (2016), overconfidence has a significant negative impact on investment decision making. This means that overconfidence will reduce the quality of investment decision making, in which case investment performance will decrease due to overconfidence. Individuals who have a low level of overconfidence will tend to rarely trade, this is different from the respondents in this study where the average Surakarta City investor has a high level of overconfidence seen from the statement points obtained which are quite high. If someone tends to be more confident about the decisions they make, then that person tends to pay less attention to the risks they face. Overconfidence causes investors to bear greater risks in making investment decisions (Kartini and Nugraha, 2016). This research is in line with Prospect Theory where if in this study there is a psychological bias, in this research is overconfidence, investors tend to make irrational decisions.

Results of Financial Education Moderation with Financial Literacy, Risk Perception, and Overconfidence

The results of the t test for the moderating variable financial education on the financial literacy variable (X1) and investment decisions (Y) before adding the control variables can be seen in Model 5 Table 3, after adding the control variables Model 12 Table 4, the t value is 2.078 and 2.287. Sig value. 0.000 and 0.024. Based on the results of tcount>ttable (2.078>1.9760 and 2.287>1.9760) and Sig. <0.05 (0.039<0.05 and 0.024<0.05) so the interaction variable of financial literacy and financial education has an impact on investment decisions (Y). The results concluded that Ho was rejected and Ha was accepted.

The t-test results of the moderating variable financial education on risk perception variables (X2) and investment decisions (Y) before adding the control variables can be seen in Model 6 Table 3, after adding the control variables Model 13 Table 4. The t-count values are 4.180 and 3.745. Sig. Value 0.000 and 0.000. Based on the results of tcount>ttable (4.180>1.9760 and 3.745>1.9760) and Sig. <0.05 (0.000<0.05 and 0.000<0.05) then the interaction variable of risk perception with financial education has an impact on investment decisions (Y). The results concluded that Ho was rejected and Ha was accepted.

The results of the t-test for the moderating variable of financial education on overconfidence (X3) and investment decision (Y) before adding the control variable can be seen in Model 7 Table 3, after adding the control variable to Model 14 Table 4. The tcount values are 3.278 and 3.556. Sig. Value 0.001 and 0.001. Based on the results of tcount>ttable (3.278>1.9760 and 3.556>1.9760) and Sig. <0.05 (0.001<0.05 and 0.001<0.05) so the interaction variable overconfidence with financial education has an impact on investment decisions (Y). The results concluded that Ho was rejected and Ha was accepted.

Research shows that the moderating variable of financial education can moderate financial literacy, risk perception, and investor overtrust in Surakarta City. Financial education can strengthen or weaken the relationship between financial literacy, risk perception, and overconfidence in making investment decisions by Surakarta City investors. This research is in line with Wagner (2019) which states that financial education has a positive correlation with financial literacy. This research is also in line with Starcek & Trunk (2018), financial education increases individual ability and confidence to increase awareness of financial risks and opportunities, and make decisions.

Surakarta investors who were respondents in this study on average received financial education at high school and university, judging from the answers to statements about whether or not they had received financial education. Appropriate material related to finance and length of study needs to be considered so that it can be applied properly, bearing in mind that financial education is an important factor in increasing financial understanding and well-being. Based on these results, financial education needs to be considered to be given to educational institutions to help investors or potential investors in investing in the capital market. The financial education provided needs to be deepened so that knowledge regarding capital markets becomes better.

CONCLUSION

Based on the test results that have been discussed, it can be concluded that: (1) The results obtained are that financial literacy has a significant positive effect on investment decision making by Surakarta capital market investors. The research results explain that investors in the city of Surakarta who have a broad level of knowledge will make investment decisions in a timely and accurate manner; (2) The results obtained show that risk perception has a significant positive influence on investment decision making by Surakarta investors in the capital market. The results of this research explain that the higher the risk perception held by investors in Surakarta, the better their risk assessment will be to avoid losses. Investors in Surakarta City tend to be risk takers and place their funds in risky places because they believe in their abilities; (3) The results obtained show that overconfidence has a significant negative influence on the investment decision making of Surakarta investors in the capital market. The results of this research explain that the higher the level of investor overconfidence in Surakarta, the quality of investment decision making will decrease, where investment performance will decrease due to this overconfidence; (4) The results obtained are that financial education can moderate the relationship between financial literacy, risk perception, and overconfidence in making investment decisions by Surakarta capital market investors. In conclusion, financial education carried out by Surakarta investors can strengthen or weaken the impact of financial literacy, risk perception, and overconfidence in making investment decisions by Surakarta investors in the capital market.

The results of this study show that the aspects that influence investor decision making in the City of Surakarta are influenced by risk perception, financial literacy and overconfidence. The results of this research support prospect theory by Tversky and Kahneman, individual decision making is not always carried out rationally. Related to investment decision making is influenced by psychological bias and risk. This study proves that financial education can be a moderating variable, so that future research can develop financial education as a moderating variable or use financial education as an independent variable. Future research can explain and use more detailed financial education variable research instruments such as what financial education has been obtained by each individual so that the results obtained are more valid. It is important for educational institutions and teachers to provide learning about financial education, especially the capital market, so that students have good knowledge about the capital market and increase financial literacy. It is necessary to invite speakers who are experts in the investment field so that students have real knowledge from experts. The limitation of this research are about the amount of respondent just from investor in Surakarta so the future research can enlarge the sample and the variable that used in this research can be developed again, specifically on the instrument that been used. Then for the researcher who want to use the same variable can update their instrument for the better and accurate result.

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