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The Effect of Financial Literacy, Risk Aversion, Risk Tolerance, and Investment Knowledge on Investment Decisions with Locus of Control as a Moderating Variable (Case Study: Accounting Students in Jakarta)

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Abstrak. *Keputusan investasi mahasiswa dipengaruhi oleh kompleksitas faktor kognitif dan psikologis yang memerlukan pemahaman mendalam untuk mengoptimalkan pengambilan keputusan finansial. Penelitian ini bertujuan untuk menguji pengaruh financial literacy, risk aversion, risk tolerance, dan investment knowledge terhadap keputusan investasi mahasiswa akuntansi yang dimoderasi oleh locus of control. Sampel penelitian terdiri dari 150 responden, dengan data dikumpulkan melalui kuesioner dan dianalisis menggunakan Structural Equation Modelling (SEM) berbasis SmartPLS versi 4.0. Hasil menunjukkan bahwa keempat variabel independen tersebut berpengaruh signifikan terhadap keputusan investasi. Locus of control mampu memoderasi hubungan antara financial literacy dan investment knowledge terhadap keputusan investasi, namun tidak memoderasi hubungan risk aversion maupun risk tolerance. Nilai R-square sebesar 0.944 menunjukkan kekuatan model yang sangat tinggi dalam menjelaskan variabel dependen. Implikasi praktis mencakup penguatan literasi keuangan mahasiswa serta pengembangan pelatihan investasi berbasis kepercayaan diri dan kontrol internal.*

Kata kunci: *Financial Literacy; Risk Tolerance; Investment Knowledge; Locus of Control; Keputusan Investasi.*

Abstract. *Student investment decisions are influenced by a complexity of cognitive and psychological factors that require in-depth understanding to optimize financial decision making. This study aims to examine the effect of financial literacy, risk aversion, risk tolerance, and investment knowledge on accounting students' investment decisions moderated by locus of control. The research sample consisted of 150 respondents, with data collected through questionnaires and analyzed using Structural Equation Modeling (SEM) based on SmartPLS version 4.0. The results show that the four independent variables have a significant effect on investment decisions. Locus of control is able to moderate the relationship between financial literacy and investment knowledge on investment decisions, but does not moderate the relationship between risk aversion and risk tolerance. The R-square value of 0.944 indicates a very high model strength in explaining the dependent variable. Practical implications include strengthening students' financial literacy and developing investment training based on self-confidence and internal control.*

Keywords: *Financial Literacy; Risk Tolerance; Investment Knowledge; Locus of Control; Investment Decision.*

Introduction

Investment decision is one of the fundamental aspects of personal financial management that requires an in-depth understanding of the various factors that influence it. However, the right investment decision depends not only on the availability of information, but also on an individual's ability to understand, analyze and apply financial knowledge in the context of rational decision-making. Financial literacy has become a major focus in behavioral finance research, especially in relation to investment decisions. Research conducted by (Ramadhani, 2025) shows that a high level of financial literacy tends to improve the quality of individual investment decisions. This is in line with the findings of (Putri & Simanjuntak, 2020) which emphasize that a good understanding of financial products and investment risks is an important predictor of effective investment decision making. Financial literacy is not only related to theoretical knowledge, but also the practical ability to apply financial concepts in real situations.

In addition to financial literacy, psychological factors such as risk aversion and risk tolerance play a crucial role in shaping investment behavior. Risk aversion refers to an individual's tendency to avoid risk, while risk tolerance describes an individual's ability to accept a certain level of risk to obtain the expected return. Research (Hari Ashari, 2024) reveals that differences in the level of risk aversion and risk tolerance between individuals significantly affect the choice of investment instruments and portfolio strategies used. The interaction between these two variables creates complex dynamics in the investment decision-making process. Investment knowledge is another dimension that is no less important in influencing investment decisions. Investment knowledge includes an understanding of various investment instruments, capital market mechanisms, diversification strategies, and fundamental and technical analysis. A study conducted by (Amanda *et al.*, 2023) demonstrated that students with higher levels of investment knowledge tend to make more rational investment decisions and have better portfolio performance compared to those with limited knowledge. In a more complex context, locus of control as a psychological variable has the potential to moderate the relationship between these factors and investment decisions. Locus of control describes individuals' perceptions of the extent to which they can control events that occur in their lives. Research (Putrie & Usman, 2022) shows that locus of control can influence the way individuals process financial information and make investment decisions. Accounting students in Jakarta are an interesting population to study because they have an educational background that provides a basic understanding of financial concepts, but are often still in the stage of learning and developing practical skills in personal financial management. This study aims to analyze and empirically prove the effect of financial literacy, risk aversion, risk tolerance, and investment knowledge on the investment decisions of accounting students in Jakarta, and test the moderating role of locus of control in the relationship. Theoretically, this research is expected to contribute to the development of behavioral finance theory, especially in understanding the complexity of factors that influence investment decisions. Practically, the results of this study can provide insights for educational institutions in designing a more effective curriculum to improve students' financial literacy, as well as for financial practitioners in developing educational strategies and investment products that suit the characteristics of young investors.

Research Methodology

Population and Sample Selection Technique

This research uses a quantitative approach with explanatory purposes. Respondents totaled 150 active accounting students in Jakarta who have investment experience. The sampling technique used is purposive sampling with the criteria that active students and have invested. Data was collected through Google Form using a questionnaire instrument with a Likert scale of 1-5. The research variables consist of dependent variables (investment decisions), independent variables (financial literacy, risk aversion, risk tolerance, investment knowledge), and moderating variables (locus of control).

Variable operationalization is based on indicators adapted from previous research. Instrument validity was tested through AVE and reliability through Cronbach's Alpha and Composite Reliability.

Operational Variables

The dependent variable in this study is investment decisions. The independent variables in this study are: Financial literacy, risk aversion, risk tolerance, and investment knowledge. The question items are measured using a 1-5 point *Linkert* Scale, where 5 points indicate that there is more influence between variables, while if the points lead to number 1, it illustrates that there is no influence between variables. The moderating variable in this study is *Locus Of Control*. In this study, linear regression analysis was used as follows:

$$Y : \alpha + \beta1X1 + ...+ \beta4X4 + e$$
$$Y : \alpha + \beta1X1Z + ...+ \beta4X4Z + e$$

Description

Y = Investment Decision
α = Constant
β1-4 = Regression coefficient
X1 = *Financial Literacy*
X2 = *Risk Aversion*
X3 = *Risk Tolerance*
X4 = *Investment Knowledge*
Z = *Locus Of Control*
e = *Error*

Results and Discussion

Results

The research findings indicate the following:

Table 1. Validity Test Results

Average variance extracted (AVE)		Results
Locus Of Control (M)	0.681	Valid
Financial Literacy (X1)	0.680	Valid
Risk Aversion (X2)	0.582	Valid
Risk Tolerance (X3)	0.664	Valid
Investment Knowledge (X4)	0.687	Valid
Investment Decision (Y)	0.679	Valid

Table 2. Reliability Test Results

Variables	Cronbach's alpha	Composite reliability	Results
Locus Of Control (M)	0.883	0.885	Reliable
Financial Literacy (X1)	0.882	0.886	Reliable
Risk Aversion (X2)	0.828	0.865	Reliable
Risk Tolerance (X3)	0.832	0.835	Reliable
Investment Knowledge (X4)	0.844	0.845	Reliable
Investment Decision (Y)	0.842	0.843	Reliable

Table 3. Coefficient of Determination Analysis Test

Variabel	*R-square*	*R-square adjusted*
Keputusan Investasi (Y)	0.944	0.941

Table 4. Hypothesis Test with moderating variables

Pengaruh	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Keterangan
X_1 -> Y	0.057	0.058	0.032	2.315	0.021	Signifikan
X_2 -> Y	0.054	0.056	0.054	2.103	0.036	Signifikan
X_3 -> Y	0.876	0.884	0.047	18.629	0.000	Signifikan
X_4 -> Y	0.082	0.074	0.059	2.712	0.007	Signifikan
X_1Z -> Y	0.007	0.000	0.032	2.215	0.027	Signifikan
X_2Z -> Y	0.031	0.021	0.054	1.545	0.123	Tidak Signifikan
X_3Z -> Y	0.027	0.019	0.051	1.684	0.092	Tidak Signifikan
X_4Z -> Y	0.096	0.083	0.074	2.001	0.046	Signifikan

Effect Size f-Square Value

The f^2 test is employed to assess the extent to which a construct is influenced by other constructs, based on changes in the R^2 value of the target construct. This test quantifies the effect size, which helps evaluate the significance of predictor variables within the research model. The f^2 value indicates the degree of influence an independent variable has on the dependent variable. The classifications for the effect size f^2 values are as follows; 0.02: Weak effect, 0.15: Medium effect, 0.35: Strong effect.

Table 5. Table of f-square Results

Influence	F-square	Description
X1 > Y	0.020	Weak effect
X2 > Y	0.010	Weakly influenced
X3 > Y	2.919	Strong influence
X4 > Y	0.019	Weakly influenced
X1Z > Y	0.000	Weakly influenced
X2Z > Y	0.003	Weakly influenced
X3Z > Y	0.003	Weakly influenced
X4Z > Y	0.024	Weakly influenced

Table 6. Fornell-Larcker Analysis Test (Discriminant Validity)

Description	M	X1	X2	X3	X4	Y
M	0.825					
X1	0.509	0.825				
X2	0.768	0.768	0.763			
X3	0.819	0.549	0.712	0.815		
X4	0.899	0.530	0.750	0.813	0.829	
Y	0.814	0.519	0.710	0.968	0.821	0.824

Based on this test, it is known that the *Fornell-Larcker* value of each variable has a value greater than the correlation value between other variables so that it meets the *Fornell-Larcker* criteria. It can be concluded that these variables have met *discriminant validity*.

Discussion

The results of the outer model test for financial literacy, risk aversion, risk tolerance, investment knowledge, locus of control as a moderating variable, and the dependent variable of investment decisions indicate that all indicator loading factors meet the required threshold of > 0.7. Outer loading values reflect the correlation between an indicator and its latent variable, meaning that the higher the loading factor, the stronger the relationship between the indicator and its corresponding latent variable. The Average Variance Extracted (AVE) for each variable exceeds 0.5, fulfilling the criteria for convergent validity and confirming that the variables are valid. Reliability tests show that the research variables have a composite reliability value > 0.7 and Cronbach's alpha values > 0.6, thus confirming that all variables meet the reliability criteria. The results from the inner model analysis show an R-square value of 0.944 for the investment decision variable, meaning that 94.4% of the variation in investment decisions can be explained by the independent variables in the model (financial literacy, risk aversion, risk tolerance, investment knowledge, and locus of control, including their moderating interactions). The remaining 5.6% is explained by factors outside this research model. The Adjusted R-square value of 0.941 indicates that the model provides a very high explanatory power for overall investment decisions.

The results also indicate that financial literacy has a significant positive effect on investment decisions, with a p-value of 0.021 (which is less than 0.05), confirming H1. This finding aligns with research by Hidayat and Pamungkas (2022), which showed that financial literacy positively affects investment decisions in the millennial generation in Jakarta. Financial literacy enables students to understand various investment instruments, analyze risks and returns, and make more rational decisions based on adequate knowledge. Furthermore, the study shows that risk aversion significantly influences investment decisions with a p-value of 0.036, leading to the acceptance of H2. This finding is consistent with research by Putrie and Usman (2022), which found that a precautionary attitude or risk-averse behavior influences students' investment decisions. Students with a high level of risk aversion are more selective and cautious in choosing investments to

minimize potential losses. Risk tolerance shows a very significant positive impact on investment decisions with a p-value of 0.000, confirming H3. This suggests that the higher the level of risk tolerance, the greater the tendency of students to invest. This result is in line with research by Salsabila *et al.* (2024), which demonstrated a significant positive effect of risk tolerance on student investment decisions. Students with higher risk tolerance are more willing to take risks in pursuit of higher returns. Investment knowledge also significantly affects investment decisions with a p-value of 0.007, confirming H4. This finding supports research by Hidayat *et al.* (2023), which emphasizes the importance of investment knowledge in decision-making. Students with better investment knowledge tend to make wiser decisions by assessing risks and potential returns more realistically. Locus of control significantly moderates the relationship between financial literacy and investment decisions, with a p-value of 0.027, confirming H5. This finding is in line with research by Putrie and Usman (2022), which shows that an internal locus of control strengthens the positive effect of financial literacy on investment decisions.

Students with high financial literacy and an internal locus of control (believing they can control the outcomes of their actions) are more likely to make optimal investment decisions. However, locus of control does not significantly moderate the relationship between risk aversion and investment decisions, with a p-value of 0.123, leading to the rejection of H6. This suggests that students' risk preferences are influenced more by their inherent risk attitudes rather than by internal beliefs regarding outcome control. Similarly, locus of control does not moderate the relationship between risk tolerance and investment decisions, with a p-value of 0.092, leading to the rejection of H7. This indicates that students' risk-taking behavior remains the primary factor in making investment decisions, independent of their personal beliefs in controlling outcomes. Finally, locus of control significantly moderates the relationship between investment knowledge and investment decisions, with a p-value of 0.046, confirming H8. This finding suggests that the higher students' knowledge about investments, and the stronger their belief in self-control (internal locus of control), the better their investment decisions will be.

Conclusion

This study provides significant insights into the factors influencing the investment decisions of accounting students in Jakarta. The analysis indicates that financial literacy, risk aversion, risk tolerance, and investment knowledge all have a positive and significant effect on investment decisions, with risk tolerance having the strongest influence. The research model explains 94.4% of the variation in investment decisions, demonstrating its high predictive power. Notably, locus of control does not have a direct effect on investment decisions, but it plays a crucial role as a moderator in the relationship between financial literacy and investment knowledge with investment decisions. This finding underscores the importance of cognitive abilities such as financial literacy and investment knowledge combined with internal beliefs in controlling outcomes, which optimize investment decision-making. Conversely, psychological aspects related to risk preference (risk aversion and risk tolerance) are not moderated by locus of control, suggesting these factors operate independently in shaping investment decisions.

Based on the findings, several strategic recommendations can be made. First, higher education institutions should integrate financial literacy and investment management courses into their curricula, focusing not only on technical skills but also on fostering students' self-confidence and self-efficacy in financial decision-making. Investment training programs should emphasize the development of an internal locus of control mindset, using simulations and hands-on practice. Second, regulators and capital market authorities should create public education programs tailored to the psychological characteristics of investors, particularly regarding risk tolerance and control orientation. Third, the financial services industry should develop a more comprehensive investor profiling tool that incorporates both

cognitive and psychological factors, offering personalized and effective investment recommendations. Lastly, future research should explore additional factors that may moderate the relationship between psychological variables and investment decisions, as well as test the generalizability of these findings across a broader population. In conclusion, the study confirms that financial literacy, risk aversion, risk tolerance, and investment knowledge positively and significantly influence the investment decisions of accounting students in Jakarta, with risk tolerance being the most influential factor. Locus of control moderates the effects of financial literacy and investment knowledge on investment decisions, but not risk aversion or risk tolerance. The research model demonstrates strong predictive power, with an R^2 value of 0.944. This study contributes to the advancement of behavioral finance theory by highlighting the role of internal control in strengthening the relationship between cognitive factors and investment decisions. The limitations of the study include the use of self-report data and the limited population sample. Recommendations for future research include integrating financial literacy into curricula, utilizing simulation-based training, and investigating other psychological factors as moderators in the decision-making process.

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