

Behavioral Factors and Investment Decisions: The Moderating Role of Financial Literacy

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Abstract

Investment decisions are often influenced by psychological factors that may cause investors to deviate from rational decision-making. This study aims to examine the effect of financial self-efficacy, overconfidence bias, and herding behavior on investment decisions with financial literacy as a moderating variable among students of Universitas Islam Indonesia. This research employed a quantitative approach using survey methods with students who have investment experience as respondents. Data were collected through questionnaires and analyzed using Partial Least Square Structural Equation Modeling (PLS-SEM). The results indicate that financial self-efficacy, overconfidence bias, and herding behavior have positive and significant effects on investment decisions. Furthermore, financial literacy significantly moderates the relationship between behavioral factors and investment decisions. The findings demonstrate that psychological characteristics and financial knowledge jointly influence investment behavior among young investors. This study implies that improving financial literacy through educational programs can help students manage behavioral biases and make more informed investment decisions.

Keywords: Behavioral finance; Financial literacy; Financial self-efficacy; Herding behavior; Investment decisions; Overconfidence bias

INTRODUCTION

The rapid development of financial technology and digital investment platforms has encouraged greater participation in investment activities, particularly among young investors and university students. The accessibility of investment applications, online financial information, and educational content has made capital market participation easier than before. However, increased investment participation does not necessarily guarantee that investors make optimal decisions because investment behavior is often influenced by psychological and cognitive factors beyond financial considerations (Barber & Odean, 2013). Previous studies indicate that individual investors frequently exhibit behavioral biases that may affect their ability to process information and evaluate investment alternatives rationally (Kahneman & Tversky, 1979; Thaler, 1999).

Traditional financial theory assumes that investors behave rationally by considering available information and maximizing expected returns. However, behavioral finance theory challenges this assumption by emphasizing that investors are affected by psychological factors, emotions, cognitive limitations, and social influences when making financial decisions (Shefrin, 2000; Barberis & Thaler, 2003). According to behavioral finance theory, investment decisions are not only determined by economic factors but also by individual characteristics that influence perceptions, confidence levels, and responses toward uncertainty (Ackert & Deaves, 2009). Therefore, examining behavioral factors is important to understand investment decision-making, particularly among young investors who generally have limited investment experience.

One psychological factor that may influence investment decisions is financial self-efficacy. Financial self-efficacy refers to an individual's belief in their ability to manage financial activities, solve financial problems, and achieve desired financial outcomes (Bandura, 1997). Individuals with higher financial self-efficacy tend to demonstrate stronger confidence in evaluating investment opportunities, managing risks, and making financial decisions (Lown, 2011). Previous research has shown that financial self-efficacy is positively associated with financial behavior because individuals with greater confidence are more likely to engage in financial planning and

investment activities (Farrell et al., 2016; Herawati et al., 2020). In the investment context, higher financial self-efficacy may encourage investors to actively seek information and make investment decisions based on personal analysis rather than external pressure.

Another important behavioral factor is overconfidence bias, which occurs when individuals overestimate their knowledge, abilities, or accuracy in predicting future outcomes (Odean, 1998). Overconfident investors often believe that they possess superior investment abilities compared with others, which may encourage greater trading activity and investment participation (Daniel et al., 1998). Although confidence can increase investors' willingness to make decisions, excessive confidence may lead to inaccurate judgments, underestimation of risks, and suboptimal investment outcomes (Barber & Odean, 2001). Previous empirical studies have found that overconfidence influences investment behavior, particularly among inexperienced investors who rely heavily on their own judgments (Pompian, 2012; Adil et al., 2021).

In addition to individual psychological characteristics, investment decisions can also be influenced by social factors through herding behavior. Herding behavior describes the tendency of individuals to imitate the decisions or actions of other investors rather than relying on independent analysis (Bikhchandani et al., 1992). In financial markets, investors may follow market trends, recommendations from peers, or decisions made by other investors due to uncertainty and limited information availability (Christie & Huang, 1995). This phenomenon is particularly relevant among young investors because students often have limited investment knowledge and experience, making them more vulnerable to social influence. Several studies have confirmed that herding behavior plays an important role in shaping investment decisions among young investors and market participants (Gupta & Goyal, 2022; Yulianti et al., 2025).

Although previous studies have investigated the influence of financial self-efficacy, overconfidence bias, and herding behavior on investment decisions, the findings remain inconsistent. Some studies demonstrate that behavioral factors positively influence investment decisions, while others suggest that behavioral biases may reduce investment rationality (Milati & Zen, 2022; Darmayanti et al., 2023). These differences indicate that additional factors may explain how behavioral characteristics influence investment decisions.

One factor that may explain these inconsistencies is financial literacy. Financial literacy represents an individual's ability to understand financial concepts, evaluate financial information, and make appropriate financial decisions (Lusardi & Mitchell, 2014). Individuals with higher financial literacy are generally better able to assess risks, compare investment alternatives, and avoid irrational financial behavior (Awais et al., 2016). Financial literacy may therefore function not only as a direct determinant of investment decisions but also as a mechanism that strengthens or weakens the influence of behavioral factors. Recent studies have shown that financial literacy can moderate the relationship between behavioral biases and investment decisions by reducing excessive reliance on emotions, confidence, and social influence (Wardhani & Nur, 2025; Budiman et al., 2025).

Despite the growing literature on behavioral finance, several limitations remain in previous studies. First, prior studies have generally examined behavioral factors such as financial self-efficacy, overconfidence bias, and herding behavior as independent predictors of investment decisions without considering their simultaneous interaction within a single research model. Second, previous studies have mostly focused on behavioral factors as direct determinants of investment decisions, while the role of financial literacy as a moderating mechanism that explains how psychological and social factors influence investment decisions remains underexplored. Third, empirical studies focusing on young investors, particularly university students in Indonesia, are still limited despite their increasing participation in digital investment activities.

Therefore, this study proposes an integrated behavioral finance model by simultaneously examining financial self-efficacy, overconfidence bias, and herding behavior with financial literacy as a moderating variable. The novelty of this study lies in explaining how financial knowledge can strengthen or weaken the influence of psychological characteristics and social influence on investment decisions among university students. Unlike previous studies that mainly investigate

direct relationships between behavioral factors and investment decisions, this research highlights the interaction between behavioral tendencies and financial literacy within a single empirical framework.

This study aims to examine the effects of financial self-efficacy, overconfidence bias, and herding behavior on investment decisions among students of Universitas Islam Indonesia and to investigate the moderating role of financial literacy in these relationships. Theoretically, this research contributes to behavioral finance literature by providing empirical evidence regarding the interaction between psychological characteristics and financial knowledge. Practically, the findings may support universities, financial institutions, and policymakers in designing financial education programs that encourage rational and informed investment behavior among young investors.

Behavioral finance theory explains that investment decisions are influenced not only by financial considerations but also by psychological and social factors. Financial self-efficacy reflects an individual's confidence in managing financial activities and making financial decisions, while overconfidence bias describes excessive confidence in personal knowledge and investment abilities. Herding behavior refers to the tendency to follow other investors' decisions rather than relying on independent analysis. In addition, financial literacy represents an individual's ability to understand financial concepts, evaluate investment information, and make appropriate financial decisions. These concepts provide the theoretical foundation for understanding how behavioral factors influence investment decisions and how financial literacy may moderate these relationships.

Based on behavioral finance theory and previous empirical findings, this study develops hypotheses regarding the relationships between behavioral factors, namely financial self-efficacy, overconfidence bias, and herding behavior, with investment decisions. In addition, financial literacy is proposed as a moderating variable that may influence the strength of these relationships.

Financial self-efficacy reflects an individual's confidence in managing financial activities and making investment decisions. Individuals with higher financial self-efficacy tend to have greater confidence in evaluating investment opportunities and managing financial risks, which may encourage investment decision-making. Therefore, the following hypothesis is proposed:

H1: Financial self-efficacy has a positive effect on investment decisions.

Overconfidence bias refers to the tendency of individuals to overestimate their knowledge, abilities, or accuracy in predicting investment outcomes. Investors with higher overconfidence may be more confident in making investment decisions based on their own judgments. Therefore, the following hypothesis is proposed:

H2: Overconfidence bias has a positive effect on investment decisions.

Herding behavior describes the tendency of individuals to follow the decisions or actions of other investors rather than relying on independent analysis. This behavior may influence investment decisions, particularly among young investors who are exposed to social influence and investment trends. Therefore, the following hypothesis is proposed:

H3: Herding behavior has a positive effect on investment decisions.

Financial literacy represents an individual's ability to understand financial concepts, evaluate investment information, and make appropriate financial decisions. Higher financial literacy may influence how individuals respond to behavioral factors by improving their ability to assess risks and process information. Therefore, financial literacy is expected to moderate the relationships between behavioral factors and investment decisions.

H4: Financial literacy moderates the relationship between financial self-efficacy and investment decisions.

H5: Financial literacy moderates the relationship between overconfidence bias and investment decisions.

H6: Financial literacy moderates the relationship between herding behavior and investment decisions.

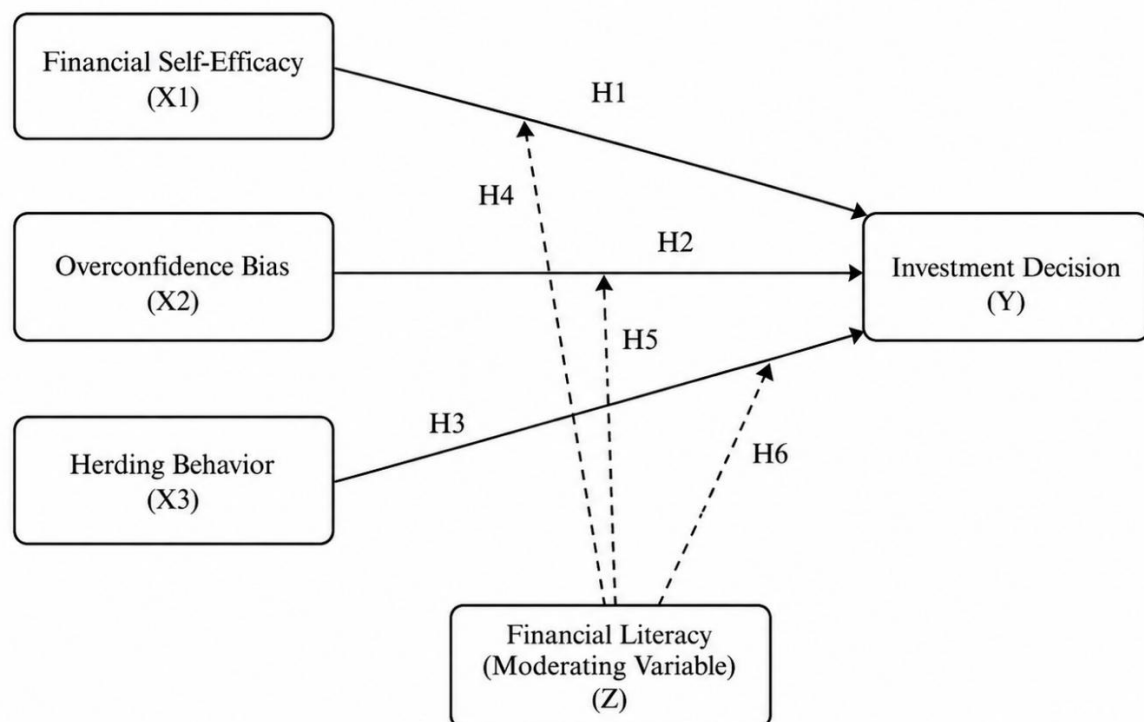


Figure 1. Research Framework
Source: Developed by the authors.

METHOD

Research Design and Subject

This study employed a quantitative research approach with an explanatory research design. The research aims to examine the causal relationships between behavioral factors, namely financial self-efficacy, overconfidence bias, and herding behavior, toward investment decisions, while investigating the moderating role of financial literacy. The research framework was developed based on the perspective of behavioral finance, which explains that financial decisions are influenced not only by economic considerations but also by psychological and cognitive factors (Barberis & Thaler, 2003).

The research subjects consisted of active students of Universitas Islam Indonesia from the 2021–2025 cohorts who had previously engaged in or were currently engaged in investment activities. The selection of this population was based on the increasing involvement of university students in digital investment platforms and their exposure to various investment information sources. Therefore, students with investment experience were considered appropriate respondents for examining the relationship between behavioral factors, financial literacy, and investment decisions. The selection of students as research subjects was based on their relevance to the research context and their experience in making investment decisions. Investment activities considered in this study included various financial instruments such as stocks, mutual funds, bonds, sukuk, digital gold, cryptocurrency, and other investment instruments.

Population and Sample

The population in this study consisted of students of Universitas Islam Indonesia. The sampling technique used was non-probability sampling with a purposive sampling method, with the following criteria:

1. Active students of Universitas Islam Indonesia;
2. Students from the 2021, 2022, 2023, 2024, or 2025 cohorts;
3. Students who had previously engaged in or were currently engaged in investment activities;
4. Students who knew about or had used investment instruments, such as stocks, mutual funds, bonds, sukuk, digital gold, cryptocurrency, or other investment instruments; and
5. Students who were willing to complete the research questionnaire.

The minimum sample size was determined using the recommendation of Hair et al., in which the number of measurement indicators is multiplied by at least five. This study employed 25 measurement indicators; therefore, the minimum required sample was calculated as follows:

$$\text{Minimum Sample} = \text{Number of Indicators} \times 5$$

$$\text{Minimum Sample} = 25 \times 5 = 125$$

Although the minimum sample requirement was 125 respondents, this study obtained data from 150 respondents. The final sample size exceeded the minimum requirement, providing sufficient statistical power for hypothesis testing using PLS-SEM. According to Hair et al. (2021), PLS-SEM analysis does not only consider the minimum sample size based on the number of indicators but also evaluates the complexity of the structural model and the statistical power required to estimate relationships among latent variables. With 150 valid responses and five latent constructs consisting of financial self-efficacy, overconfidence bias, herding behavior, financial literacy, and investment decisions, the sample size was considered adequate for testing the proposed research model.

Data Collection Method

Primary data were collected through an online questionnaire distributed to active students of Universitas Islam Indonesia from the 2021–2025 cohorts who met the predetermined research criteria. The questionnaire was distributed online using a digital survey platform and shared through student communication networks, including academic and student group channels. The data collection process was conducted during June–August 2026. Before completing the questionnaire, respondents were informed about the research objectives and screening criteria to ensure that only students with previous or current investment experience participated in the study. Responses that did not meet the predetermined criteria were excluded from the analysis. The questionnaire consisted of statements measuring five constructs: financial self-efficacy, overconfidence bias, herding behavior, financial literacy, and investment decisions.

All measurement items were assessed using a five-point Likert scale ranging from:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

The questionnaire was developed based on previous studies related to behavioral finance and investment behavior. The indicators were adapted to measure respondents' perceptions, attitudes, and investment decision-making behavior.

Research Variables and Measurement

The research model consists of three independent variables, one dependent variable, and one moderating variable.

Table 1. Research Variables and Measurement

Variable	Type	Measurement Concept
Financial Self-Efficacy (X1)	Independent variable	Individual confidence in managing financial decisions and investment activities
Overconfidence Bias (X2)	Independent variable	Excessive confidence in personal knowledge and investment ability
Herding Behavior (X3)	Independent variable	Tendency to follow other investors' decisions
Investment Decision (Y)	Dependent variable	Individual decision-making process in selecting investment alternatives
Financial Literacy (Z)	Moderating variable	Ability to understand financial concepts and evaluate investment information

Source: Developed by the authors based on previous literature.

Data Analysis Technique

The data analysis was conducted using Partial Least Square Structural Equation Modeling (PLS-SEM) with the assistance of statistical software. PLS-SEM was selected because it is suitable for examining complex relationships between latent variables and analyzing moderating effects (Hair et al., 2021).

The analysis procedure consisted of two stages:

1. Measurement Model Evaluation (Outer Model)

The outer model evaluation was conducted to assess the validity and reliability of research instruments. The evaluation included:

- Convergent validity, assessed through factor loading and Average Variance Extracted (AVE);
- Discriminant validity, assessed through cross-loading and construct correlations;
- Reliability testing, assessed through Cronbach's Alpha and Composite Reliability.

A construct was considered reliable when Cronbach's Alpha and Composite Reliability values exceeded 0.70 (Hair et al., 2021).

2. Structural Model Evaluation (Inner Model)

The inner model evaluation was conducted to test relationships between constructs. The evaluation included:

- Coefficient of determination (R^2);
- Hypothesis testing using bootstrapping procedure.

Hypothesis testing was performed using bootstrapping by examining the Original Sample (O), T-statistics, and P-values. A relationship was considered significant when the T-statistic value exceeded 1.96 and the P-value was below 0.05 (Hair et al., 2021).

RESULTS AND DISCUSSION

The Respondent Characteristics

The respondents in this study were students of Universitas Islam Indonesia who had investment experience. The characteristics of respondents were analyzed to provide an overview of the research sample, including gender, faculty, study program, investment experience, investment instruments, and monthly income/allowance. The respondent profile analysis is important because investment behavior may vary depending on individual characteristics and financial experience.

Table 2. Characteristics of Respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	49	32,67%
	Female	101	67,33%
Faculty	Faculty of Business and Economics	75	50,00%
	Faculty of Islamic Studies	19	12,67%
	Faculty of Social and Cultural Sciences	18	12,00%
	Faculty of Mathematics and Natural Sciences	10	6,67%
	Faculty of Industrial Technology	9	6,00%
	Faculty of Law	7	4,67%
	Faculty of Civil Engineering and Planning	5	3,33%
	Faculty of Medicine	5	3,33%
	Faculty of Psychology	2	1,33%
	More than one category	1	0,67%
Cohort	2021	8	5,33%
	2022	49	32,67%
	2023	13	8,67%
	2024	64	42,67%
	2025	15	10,00%
	More than one category	1	0,67%
Investment Experience	< 6 months	91	60,67%
	6–12 months	27	18,00%
	1–2 years	15	10,00%
	> 2 years	14	9,33%
	Others	3	2,00%
Investment Instrument	Stocks	32	21,33%
	Mutual Funds	26	17,33%
	Bonds	1	0,67%
	Digital Gold	14	9,33%
	Cryptocurrency	4	2,67%
	Other Instruments	45	30,00%
	Combination of Several Instruments	28	18,67%
Monthly Income/Allowance	< Rp1,000,000	25	16,67%
	Rp1,000,000–Rp2,000,000	51	34,00%
	Rp2,000,001–Rp3,000,000	34	22,67%
	Rp3,000,001–Rp4,000,000	11	7,33%
	Rp4,000,001–Rp5,000,000	13	8,67%
	> Rp5,000,000	13	8,67%
	More than one category	3	2,00%

Source: Primary data processed by researchers (2026)

Measurement Model Evaluation

The measurement model evaluation was conducted to examine the validity and reliability of the research constructs before testing the structural model. In PLS-SEM analysis, the

measurement model is evaluated through convergent validity and reliability testing. Convergent validity was initially assessed by examining the factor loading values of each indicator. The results of the outer loading analysis are presented in Table 3.

Table 3. Outer Loading Results

Construct	Indicator	Outer Loading
Financial Self-Efficacy	FS1	0.855
	FS2	0.836
	FS3	0.854
	FS4	0.795
	FS5	0.823
Overconfidence Bias	OB1	0.815
	OB2	0.782
	OB3	0.855
	OB4	0.837
	OB5	0.860
Herding Behavior	HB1	0.826
	HB2	0.804
	HB3	0.838
	HB4	0.848
	HB5	0.844
Investment Decision	KI1	0.833
	KI2	0.807
	KI3	0.829
	KI4	0.817
	KI5	0.816
Financial Literacy	FL1	0.880
	FL2	0.807
	FL3	0.809
	FL4	0.813
	FL5	0.745

Source: Primary data processed by researchers (2026)

The results indicate that all indicators meet the recommended factor loading threshold, indicating that each indicator adequately represents its respective construct.

Furthermore, convergent validity was evaluated based on the Average Variance Extracted (AVE) value, while construct reliability was assessed through Composite Reliability and Cronbach's Alpha values (Hair et al., 2021). The results are presented in Table 4.

Table 4. Validity and Reliability Results

Construct	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha
Financial Self-Efficacy	0.694	0.919	0.892
Overconfidence Bias	0.689	0.917	0.890
Herding Behavior	0.692	0.918	0.889
Investment Decision	0.673	0.911	0.880
Financial Literacy	0.659	0.906	0.876

Source: Primary data processed by researchers (2026)

The results presented in Table 4 demonstrate that all constructs achieved AVE values above the recommended threshold of 0.50, indicating adequate convergent validity. Additionally, all constructs obtained Composite Reliability and Cronbach's Alpha values exceeding 0.70, confirming the reliability of the measurement instruments.

Discriminant validity was assessed using the Fornell-Larcker criterion and cross-loading analysis. The Fornell-Larcker criterion evaluates whether the square root of AVE for each construct is greater than the correlations with other constructs, while cross-loading analysis examines whether each indicator has the highest loading value on its associated construct.

Table 5. Fornell-Larcker Criterion

	X1	X2	X3	Y	Z	Z*X1	Z*X2	Z*X3
X1	0.833							
X2	0.026	0.830						
X3	0.042	-0.083	0.832					
Y	0.232	0.184	0.263	0.820				
Z	-0.001	0.069	-0.017	0.222	0.812			
Z*X1	0.187	0.050	-0.074	-0.119	0.025	1.000		
Z*X2	0.053	0.037	-0.045	0.130	-0.032	0.140	1.000	
Z*X3	-0.077	-0.045	-0.109	-0.230	0.013	0.145	-0.041	1.000

Source: Primary data processed by researchers (2026)

The results of the Fornell-Larcker criterion demonstrate that the square root of AVE values for each construct are higher than the correlations with other constructs, indicating satisfactory discriminant validity.

Table 6. Cross Loading Results

	X1	X2	X3	Y	Z	Z*X1	Z*X2	Z*X3
FL1	-0.021	0.089	-0.025	0.252	0.880	0.019	0.016	-0.032
FL2	-0.021	0.094	-0.003	0.177	0.807	-0.016	-0.094	0.065
FL3	-0.027	-0.003	0.018	0.180	0.809	-0.017	0.007	-0.002
FL4	0.100	0.037	-0.070	0.113	0.813	0.139	-0.081	0.026
FL5	0.029	0.040	0.007	0.068	0.745	0.025	-0.006	0.039
FS1	0.855	-0.025	0.027	0.216	0.084	0.136	0.095	-0.015
FS2	0.836	0.004	0.064	0.145	-0.060	0.100	-0.092	-0.177
FS3	0.854	0.059	0.043	0.253	0.003	0.244	0.071	-0.067
FS4	0.795	0.048	0.045	0.165	-0.044	0.112	0.081	-0.019
FS5	0.823	0.016	-0.012	0.130	-0.027	0.140	0.012	-0.072
HB1	0.051	-0.115	0.826	0.234	0.036	-0.067	-0.044	-0.084
HB2	0.074	-0.073	0.804	0.203	-0.099	-0.021	-0.027	-0.048
HB3	0.039	-0.068	0.838	0.191	-0.088	-0.059	0.008	-0.140
HB4	0.038	0.013	0.848	0.214	0.014	-0.028	-0.007	-0.089
HB5	-0.018	-0.094	0.844	0.243	0.042	-0.121	-0.103	-0.094
KI1	0.195	0.202	0.320	0.833	0.165	-0.063	0.109	-0.084
KI2	0.239	0.187	0.068	0.807	0.211	-0.138	0.138	-0.293
KI3	0.097	0.153	0.143	0.829	0.181	-0.043	0.131	-0.119
KI4	0.179	0.162	0.261	0.817	0.159	-0.138	0.045	-0.253
KI5	0.224	0.039	0.230	0.816	0.202	-0.104	0.124	-0.208

OB1	0.029	0.815	-0.063	0.153	-0.060	0.027	0.086	-0.059
OB2	-0.020	0.782	-0.003	0.095	0.087	0.022	-0.082	0.014
OB3	0.003	0.855	-0.138	0.201	0.094	-0.023	0.046	-0.042
OB4	0.037	0.837	-0.092	0.145	0.110	0.095	0.037	-0.060
OB5	0.057	0.860	0.009	0.130	0.063	0.114	0.015	-0.016
X1 *	0.187	0.050	-0.074	-0.119	0.025	1.000	0.140	0.145
Z								
X2 *	0.053	0.037	-0.045	0.130	-0.032	0.140	1.000	-0.041
Z								
X3 *	-0.077	-0.045	-0.109	-0.230	0.013	0.145	-0.041	1.000
Z								

Source: Primary data processed by researchers (2026)

The cross-loading results show that each indicator has a higher loading value on its corresponding construct compared with other constructs. Therefore, the measurement model meets the discriminant validity criteria.

Structural Model Evaluation

The evaluation included coefficient of determination (R^2) and hypothesis testing using the bootstrapping procedure. The structural relationships among constructs were assessed based on path coefficients, t-statistics, and p-values.

Coefficient of Determination (R^2)

The R-square value indicates the extent to which independent variables explain variations in the dependent variable.

Table 7. R-Square Result

Endogenous Variable	R-Square	Adjusted R-Square
Investment Decision	0.273	0.237

Source: Primary data processed by researchers (2026)

The R-square value of investment decisions is 0.273, indicating that financial self-efficacy, overconfidence bias, herding behavior, financial literacy, and moderation variables explain 27.3% of the variation in investment decisions. The remaining 72.7% is explained by other factors outside the research model.

Hypothesis Testing

Hypothesis testing was conducted using the bootstrapping procedure in PLS-SEM. The significance of relationships was evaluated based on Original Sample (O), T-statistics, and P-values. A hypothesis is accepted when the T-statistic exceeds 1.96 and the P-value is below 0.05 (Hair et al., 2021).

Table 8. Hypothesis Testing Results

Hypothesis	Relationship	Original Sample	T Statistics	P Values	Decision
H1	Financial Self-Efficacy → Investment Decision	0.227	3.235	0.001	Accepted
H2	Overconfidence Bias → Investment Decision	0.178	2.651	0.008	Accepted
H3	Herding Behavior → Investment Decision	0.250	3.534	0.000	Accepted
H4	Financial Literacy × Financial Self-Efficacy → Investment Decision	-0.153	2.205	0.028	Accepted

H5	Financial Literacy × Overconfidence Bias → Investment Decision	0.149	2.014	0.045	Accepted
H6	Financial Literacy × Herding Behavior → Investment Decision	-0.154	2.091	0.037	Accepted

Source: Primary data processed by researchers (2026)

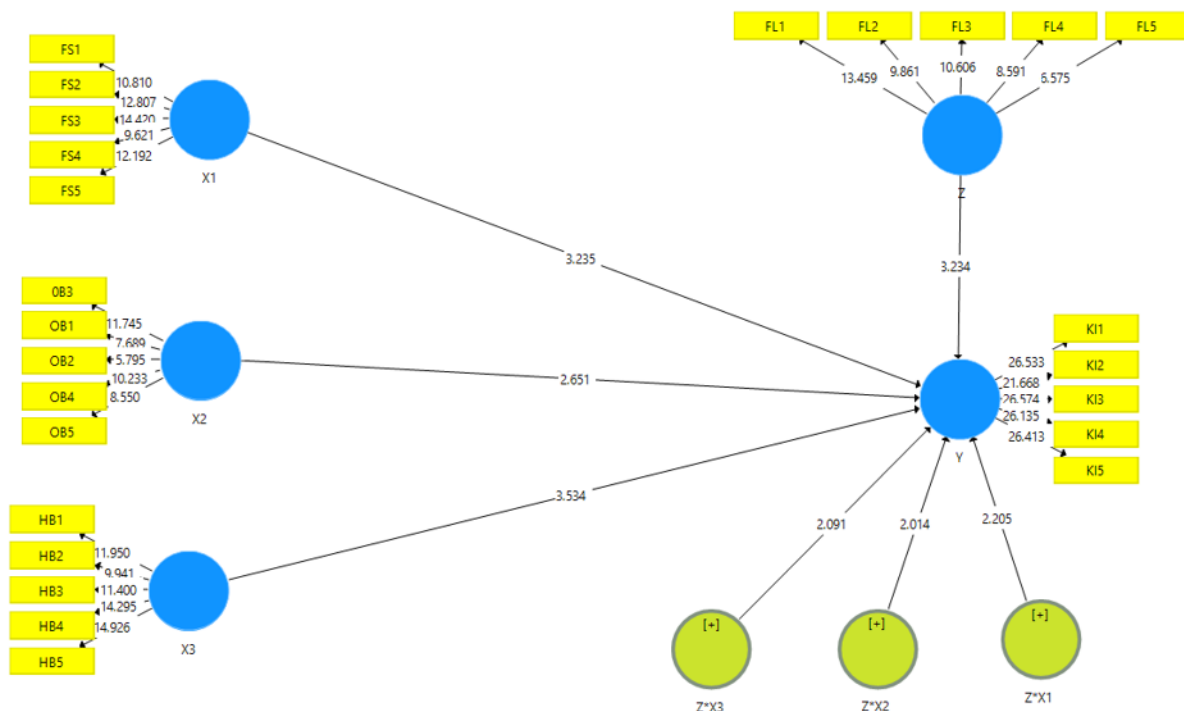


Figure 2. Structural Model Results Using PLS-SEM
Source: SmartPLS output processed by researchers.

Discussion

The results of hypothesis testing indicate that financial self-efficacy, overconfidence bias, and herding behavior significantly influence investment decisions among students of Universitas Islam Indonesia. The findings show that financial self-efficacy has a positive and significant effect on investment decisions ($\beta = 0.227$; $p = 0.001$). This result indicates that students with higher confidence in their ability to manage financial matters tend to be more active in making investment decisions. Financial self-efficacy reflects an individual's belief in their capability to perform financial activities effectively, including evaluating investment alternatives and managing potential risks. This finding supports the concept of self-efficacy proposed by Bandura (1997), which explains that individual beliefs regarding their ability influence behavioral intentions and actual actions. In the context of investment, individuals with strong financial self-efficacy are more likely to seek financial information, analyze opportunities, and make investment decisions independently (Farrell et al., 2016; Herawati et al., 2020).

The analysis also reveals that overconfidence bias has a positive and significant influence on investment decisions ($\beta = 0.178$; $p = 0.008$). This finding suggests that students who have greater confidence in their investment knowledge and ability tend to show stronger willingness to participate in investment activities. According to behavioral finance theory, overconfidence occurs when individuals overestimate their knowledge, skills, and ability to predict future

outcomes (Odean, 1998). Although excessive confidence may increase the possibility of irrational decisions, a certain level of confidence may encourage individuals to take action in financial markets. This result is consistent with previous research indicating that overconfidence affects investors' willingness to make investment decisions, particularly among inexperienced investors who rely strongly on personal judgments (Daniel et al., 1998; Pompian, 2012).

Furthermore, herding behavior was found to have the strongest positive effect and significant on investment decisions among the behavioral variables examined ($\beta = 0.250$; $p = 0.000$). This result demonstrates that social influence plays an important role in shaping students' investment behavior. Students who have limited investment experience may rely on recommendations, market trends, or decisions made by other investors when facing uncertainty. This finding is consistent with information cascade theory, which explains that individuals tend to imitate others' decisions when they have limited information or uncertainty regarding the appropriate choice (Bikhchandani et al., 1992). The result also supports previous studies highlighting that social interaction and peer influence significantly affect investment behavior, especially among young investors (Christie & Huang, 1995).

The moderation analysis demonstrates that financial literacy significantly moderates the relationships between financial self-efficacy, overconfidence bias, and herding behavior and investment decisions. Financial literacy negatively and significantly moderates the relationship between financial self-efficacy and investment decisions ($\beta = -0.153$; $p = 0.028$), indicating that students with higher financial literacy may rely less on confidence alone and make decisions based on more objective financial analysis. Similarly, financial literacy negatively and significantly moderates the relationship between herding behavior and investment decisions ($\beta = -0.154$; $p = 0.037$), suggesting that adequate financial knowledge can reduce dependence on external influences and encourage independent decision-making. Meanwhile, financial literacy positively and significantly moderates the relationship between overconfidence bias and investment decisions ($\beta = 0.149$; $p = 0.045$), indicating that financial knowledge may strengthen investors' confidence when supported by appropriate understanding of financial concepts.

These findings emphasize that investment decisions among university students are shaped by the interaction between psychological characteristics and financial knowledge. Financial literacy does not eliminate behavioral factors but functions as a mechanism that helps individuals manage and control behavioral influences. This finding extends previous behavioral finance studies by demonstrating that psychological factors alone are insufficient to explain investment decisions; instead, financial knowledge plays an important role in determining how behavioral tendencies translate into actual investment actions (Lusardi & Mitchell, 2014; Awais et al., 2016).

Overall, this study contributes to the behavioral finance literature by integrating financial self-efficacy, overconfidence bias, and herding behavior with financial literacy as a moderating mechanism. The findings suggest that improving financial literacy among university students is essential to support more rational investment decisions and reduce potential negative consequences arising from behavioral biases.

CONCLUSION

This study demonstrates that investment decisions among university students are shaped by the interaction between behavioral characteristics and financial knowledge. The findings confirm that financial self-efficacy, overconfidence bias, and herding behavior are important behavioral factors influencing investment decision-making. More importantly, this study highlights that financial literacy does not merely act as an independent factor but functions as a moderating mechanism that determines how psychological and social tendencies influence investment behavior.

The main contribution of this study is the development of an integrated behavioral finance framework that combines individual psychological factors, social influence, and financial knowledge within a single model. This approach extends previous studies that mainly examine

behavioral factors as direct predictors of investment decisions by explaining the role of financial literacy in controlling and directing behavioral influences among young investors.

From a practical perspective, the findings suggest that investment education programs for university students should focus not only on improving financial knowledge but also on increasing awareness of behavioral biases. Understanding the interaction between financial literacy and behavioral tendencies may help young investors make more informed and rational investment decisions.

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