



AN EMPIRICAL EXAMINATION OF THE IMPACTS OF FINANCIAL LITERACY, FINANCIAL ANXIETY, AND LOSS AVERSION ON INVESTMENT DECISION, WITH SELF- EFFICACY AS A MODERATING FACTOR

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ABSTRACT

This study examines how financial knowledge, worries about money, and the fear of losing money influence the way people choose to invest. It also looks at self-efficacy, which is the belief in one's own abilities, and how it affects these relationships. The research involved 100 regular investors in Bali and used a quantitative approach where data was collected through surveys. The data was analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). The results show that having good financial knowledge helps people make more informed and better investment choices. However, higher levels of money worries make people less confident and less likely to invest. The tendency to feel the pain of losing more than the joy of gaining, known as loss aversion, also has a negative effect on investment decisions. Self-efficacy influences how these factors affect investment choices. It strengthens the positive impact of financial knowledge and reduces the negative effects of money worries and loss aversion. These findings suggest that psychological and cognitive factors play an important role in helping retail investors make thoughtful decisions, especially for younger investors like those in Generation Z in Indonesia.

Keywords: Financial Literacy, Financial Anxiety, Loss Aversion, Self-Efficacy, Investment Decision

A. INTRODUCTION

A country's development is reflected, among other things, in the progress of its capital markets and securities industry. Capital markets serve as a means of interaction between fund owners and users, serving as a source of funding, an investment medium, and a liquidity mechanism for share ownership. Furthermore, they facilitate the trading of long-term financial instruments, such as stocks and bonds with maturities of more than one year (Agustian, 2022). Data released by the Indonesian Central Securities Depository (KSEI) indicates that number of investors between 2018 and 2020 reached 3.88 million, and this figure grew significantly to 7.49 million in 2021. This figure increased again by 37.68%, bringing the total number of investors to 10.331 million in 2022. Currently, the number continues to grow to 12.168 million, representing an increase of 18.1%. In line with this increase, Bali Province was chosen as the research location because it exhibits significant investor growth dynamics that exceed the national average. According to data from the Bali Province Financial Services Authority (OJK), the value of stock transactions in Bali reached IDR 3.9 trillion in 2024, a 71.16 percent increase compared to IDR 2.3 trillion in 2023. As of December 2024, the number of stock investors in Bali reached 143,402 SID, with an annual growth rate of 22.83%, placing Bali as one of the provinces with the highest capital market penetration outside Java. This growth is in line with data cited (Wiguna, 2025) that stated that by June 2025.

the number of investors reached 160,067 SID, with share ownership valued at IDR 5.81 trillion.

Psychological factors, such as fear of loss and the drive to maximize profits, are often the primary drivers of investment behavior (Giri et al., 2025; Sari et al., 2021). These findings indicate that retail investors' investment decisions are not solely based on logic or objective data but are also heavily influenced by emotional and psychological factors. Financial literacy is an essential factor contributing the effectiveness of investment decision-making. Based on data provided by Financial Services Authority (OJK, 2019), financial literacy refers to combination knowledge, competencies, and values that shape a person's attitudes and behaviors, thereby enhancing decision-making quality and financial management to promote overall well-being.(Arifin, 2020); (Arifin et al., 2025).

This low level of financial literacy not only impacts individuals' inability to manage and assess investment risks but can also lead to psychological stress when facing investment decisions. In this regard, financial literacy (Saputri & Erdi, 2023) can improve perceptions of behavioral control by providing the knowledge and skills necessary for making more rational investment decisions. Research (Saputri & Erdi, 2023) indicates that individuals with high levels financial literacy tend to be able to make wiser investment decisions and make appropriate and careful financial decisions(Arifin et al., 2025). Financial literacy is considered a fundamental knowledge that every individual must possess to prevent financial problems (Astini & Pasek, 2022). Several previous studies have indicated positive relationship between financial literacy levels and quality of individual financial decisions. Nevertheless, a gap still exists in comprehending the combined effect of financial literacy and investment knowledge on the investment decision-making process, especially within the context of today's increasingly complex and dynamic financial markets (Pratiwi et al., 2023);(Widawati & Arifin, 2021)

Essentially, financial anxiety is a psychological condition characterized by fear and worry about uncertain futures (Pasaribu, 2023). This anxiety can lead to doubt in the decision-making process, including investment decisions. Investors experiencing anxiety generally tend to delay investing due to concerns about potential future risks. Fear of potential mistakes and losses leads them to delay rather than make immediate investment decisions (Hartati & Syarifudin, 2025). Some Indonesians are still often trapped by excessive fear. Several surveys indicate that investors are more susceptible to anxiety. According to (Cahyani & Putri, 2024), anxiety is an individual's emotional response to feeling threatened, either by internal or external factors.

B. RESEARCH METODS

This research was conducted in Bali Province, targeting retail investors actively participating in capital market (stocks, mutual funds, bonds, and ETFs) within the productive age range of 20 to 60 years. Bali was selected based on the province's characteristics of dynamic economic growth and rapid financial sector development, thus creating a conducive environment for increasing financial literacy and investment interest. Retail investors were chosen as research subjects because they are the main actors in capital market activities, with characteristics of personal fund usage and varying levels of financial literacy. Unlike institutional investors supported by professional resources, retail investors tend to be more influenced by psychological factors, self-confidence levels, and risk perceptions in making investment decisions.

C. RESEARCH AND DISCUSSION RESULT

Data Analysis

The study adopted a quantitative approach, gathering data through questionnaires administered to 100 active retail investors in Bali. Data analysis was conducted using PLS-SEM technique via SmartPLS version 4.0. Additionally, classical assumption testing and regression analyses were carried out to assess data validity and ensure the robustness of the model.

Respondent Characteristics

The Based on the demographic data collected, respondents were characterized according to gender, age, education, occupation, and investment experience.

Analysis Results

Instrument

Testing

a. Validity Test:

The validity test was conducted using Pearson's correlation between each indicator and its total construct score. An instrument is considered valid if the correlation coefficient (r-count) exceeds the critical value (r-table = 0.195 at $\alpha = 0.05$).

All indicators of financial literacy, financial anxiety, loss aversion, self-efficacy, and investment decision show **r-count > r-table**, indicating all items are valid.

b. Reliability Test:

Reliability testing used Cronbach's Alpha and Composite Reliability. A construct is reliable if Cronbach's Alpha > 0.7 and Composite Reliability > 0.7. Descriptive Statistics

Variable	Cronbach's Alpha	Composite Reliability	Description
Financial Literacy	0.825	0.874	Reliable
Financial Anxiety	0.801	0.861	Reliable
Loss Aversion	0.783	0.844	Reliable
Self-Efficacy	0.875	0.902	Reliable
Investment Decision	0.832	0.880	Reliable

Descriptive Statistics

The descriptive analysis was carried out to describe respondents' responses to each variable based on the mean value.

Variable	Mean	Std. Deviation	Interpretation
Financial Literacy	4.25	0.45	High
Financial Anxiety	2.80	0.60	Moderate
Loss Aversion	3.05	0.55	Moderate
Self-Efficacy	4.10	0.50	High
Investment Decision	4.20	0.48	High

These results show that respondents have good financial literacy and self-efficacy, while financial anxiety and loss aversion are relatively moderate.

Classical Assumption Test

Normality Test

The results of Kolmogorov–Smirnov test yielded a significance value of 0.200, which exceeds 0.05, suggesting that the data follow a normal distribution.

Multicollinearity Test

Multicollinearity is tested using the VIF. If $VIF < 10$, no multicollinearity problem exists.

Variable	Tolerance	VIF	Result
Financial Literacy	0.734	1.362	No multicollinearity
Financial Anxiety	0.755	1.325	No multicollinearity
Loss Aversion	0.762	1.312	No multicollinearity
Self-Efficacy	0.720	1.388	No multicollinearity

Heteroscedasticity Test

The results of Glejser test indicate that all variables have significance values exceeding 0.05, suggesting the absence of heteroscedasticity in the model.

Multiple Linear Regression Analysis

The regression model used in this study is as follows:

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + e$$

Where:

Y = Investment Decision

X₁ = Financial Literacy

X₂ = Financial Anxiety

X₃ = Loss Aversion

X₄ = Self-Efficacy (Moderator)

Variable	Coefficient (β)	t-value	Sig.	Interpretation
Constant	1.152	—	—	—
Financial Literacy (X ₁)	0.320	4.215	0.000	Significant (+)
Financial Anxiety (X ₂)	-0.215	-2.983	0.004	Significant (-)
Loss Aversion (X ₃)	-0.188	-2.621	0.010	Significant (-)
Self-Efficacy (X ₄)	0.280	3.875	0.000	Significant (+)

The adjusted R² value of 0.625 indicates that the four independent variables account for 62.5% of the variance in investment decisions, whereas the remaining 37.5% is attributed to other factors not captured in this model.

Based on Table 2 above, F-value = 28.731 with a significance level 0.000 (< 0.05). This indicates that financial literacy, financial anxiety, loss aversion, and self-efficacy simultaneously have a significant influence on investment decision-making among retail investors in Bali.

Discussion

The Influence of Financial Literacy on Investment Decisions in the Capital Market

Based on results the interaction test, The average questionnaire score for the financial literacy variable was 4.12, which is considered high. This indicates that retail investors in Bali have a good understanding of concepts of financial management and financial planning, as well as the ability to rationally assess investment risks and opportunities.

Financial Anxiety Influences Investment Decisions in the Capital Market

Drawing upon the outcomes of the interaction analysis, financial anxiety negatively impacts investment decisions, with a T-statistic 5.195, p-value of 0.001, and a path coefficient of -0.327. This shows an inverse relationship, where the higher a person's level of financial anxiety, the lower their propensity to invest. Furthermore, the questionnaire results also showed that the average financial anxiety variable score was 2.86, which is classified as low to moderate, indicating that most respondents are able to manage their concerns about financial risk.

Loss Aversion Influences Investment Decisions in the Capital Market

According to the findings of the interaction test, it is known that loss aversion has a negative impact to investment decisions, a T-statistic value of 3.350, p-value of 0.001, and a path coefficient of -0.280. These results indicate an inverse relationship, meaning that the higher an individual's tendency to avoid losses, the lower their tendency to make investment decisions.

Self-Efficacy moderates the relationship between Financial Anxiety and investment decisions in the capital market.

According to the findings of the interaction test, it is known that self-efficacy weakens the influence of financial anxiety on investment decisions, with an original sample value of -0.405, t-statistic of 3.839, and p-value of 0.001, thus H5 is declared accepted.

Self Efficacy moderates the relationship between Loss Aversion and investment decisions in the capital market.

Based the results interaction test, is known that self-efficacy weakens the influence of loss aversion on investment decisions, with original sample value -0.367, t-statistic of 3.009, and p-value of 0.003, thus H6 is declared accepted. end to be less influenced by the fear of loss when making investment decisions. Conversely, individuals with low self-efficacy are more easily trapped by emotional biases, making them reluctant to take risks and tend to avoid rational investment decisions.

D. CONCLUSIONS AND SUGGESTIONS

Based on the results of the PLS analysis using SmartPLS and the discussion described in the previous chapter, the relationships between the variables in this study show varying directions of influence. These results show that individuals with a high tendency towards loss aversion focus more on potential losses than on profit

opportunities.

This psychological bias leads investors to be conservative, hold assets for too long, or even refuse to invest in high-risk instruments. This phenomenon reinforces the concept of behavioral finance, where financial decision-making is influenced not only by rational considerations but also by psychological factors that can lead to irrational behavior.

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