

THE INFLUENCE OF HERDING BEHAVIOR, OVERCONFIDENCE, AND RISK TOLERANCE ON INVESTMENT DECISIONS WITH FINANCIAL LITERACY AS A MODERATING VARIABLE

Eligia Shela Utami¹, Hendro Widjanarko^{2*}, Khoirul Hikmah³

^{1*}Universitas Pembangunan Nasional Veteran Yogyakarta

Email : hendro.widjanarko@upnyk.ac.id

ABSTRACT

This study aims to analyze the effect of herding behavior, overconfidence, and risk tolerance on investment decisions among Generation Z in DKI Jakarta, as well as to examine the role of financial literacy as a moderating variable. This research employs a quantitative approach using a survey method through the distribution of online questionnaires based on a 1–5 Likert scale. The sampling technique used was purposive sampling, with criteria including Generation Z individuals domiciled in DKI Jakarta who have actively invested in stocks at least twice in the past two years. A total of 421 respondents met the research criteria. Data analysis was conducted using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) method with the assistance of SmartPLS 4.0. Validity and reliability tests were performed using SPSS based on a pilot study involving 30 respondents. The results indicate that herding behavior, overconfidence, and risk tolerance have a positive and significant effect on investment decisions. Furthermore, financial literacy is proven to significantly moderate the relationship between the three independent variables and investment decisions, strengthening the influence of psychological factors on investment decision-making. These findings suggest that psychological factors and the level of financial literacy play an important role in shaping the investment behavior of Generation Z. This study is expected to contribute to the development of behavioral finance literature and provide insights for regulators, financial industry practitioners, and educational institutions in enhancing financial literacy and improving the quality of investment decision-making among young investors.

Keywords: *herding behavior, overconfidence, risk tolerance, financial literacy, investment decision, Generation Z.*

INTRODUCTION

Investment decision-making is a complex process that is not always based on rationality as assumed in traditional financial theory. This theory posits that investors act rationally by utilizing all available information to maximize returns, as reflected in the Efficient Market Hypothesis (Fama 1970). However, in practice, investment decisions are often influenced by psychological and emotional factors, as explained in the behavioral finance approach (Suresh 2021). This condition leads to investment decisions that are not always optimal and may result in poor performance (Yoong, J., & Ferreira 2013). In Indonesia, dynamic and uncertain market conditions, such as the volatility of the Composite Stock Price Index (IHSG), further trigger emotional behaviors such as panic selling and trend-based decision-making (Ajaib 2025).

From a behavioral finance perspective, investment decisions are influenced by various psychological biases, including herding behavior, overconfidence, and risk tolerance. Herding behavior reflects the tendency of investors to follow others' decisions without adequate analysis (Lao and Singh 2012). Overconfidence describes

an excessive level of confidence in one's own abilities and information (Pompian 2012), while risk tolerance refers to an investor's capacity to bear investment risk (Soleha 2018). Previous studies have shown that these three variables influence investment decisions; however, the findings remain inconsistent (Adielyani and Mawardi 2020; Adil, Singh, and Ansari 2022; Adiputra, Bangun, and Jullian 2023; Herlina et al. 2020).

Generation Z was selected as the research subject due to its characteristics as the group with the highest internet usage in Indonesia, accounting for 34.40% of total internet users (APJII, 2024). The high intensity of social media usage exposes Gen Z to rapid and massive investment-related information, which may influence decision-making processes in a less rational manner. Furthermore, Gen Z is in the early stage of productive age, with a relatively dynamic level of risk tolerance, making it an interesting group to study in the context of investment behavior. On the other hand, DKI Jakarta was chosen as the research location as it serves as the economic center and has a high proportion of investors, approximately 21.80% of the total investors in Indonesia (KSEI 2025).

Despite the high level of investment participation in this region, disparities in financial literacy among individuals remain a challenge in achieving rational investment decision-making.

In addition to psychological factors, financial literacy plays a crucial role in determining the quality of investment decisions. Financial literacy enables individuals to understand risk-return concepts and make more rational and informed decisions (OJK, 2023). Individuals with low levels of financial literacy tend to make suboptimal investment decisions and face higher financial risks (Lusardi, Mitchell, and Curto 2014). However, several studies suggest that financial literacy does not always mitigate behavioral biases; in certain conditions, it may even reinforce biases such as overconfidence (Ahmad and Shah 2020; Mahmood et al. 2024). To date, research that comprehensively examines the role of financial literacy as a moderating variable in the relationship between herding behavior, overconfidence, and risk tolerance on investment decisions among Generation Z in DKI Jakarta remains limited. Therefore, this study aims to fill this research gap and provide a more comprehensive understanding of investment behavior in the digital era.

RESEARCH METHODS

This study employs a quantitative approach with a survey design to analyze the influence of herding behavior, overconfidence, and risk tolerance on investment decisions, with financial literacy serving as a moderating variable. The quantitative approach is selected as it enables the objective measurement of relationships among variables using numerical data and allows for hypothesis testing (Sekaran, U., & Bougie 2016). This study is also causal in nature, aiming to identify cause-and-effect relationships among variables within the context of Generation Z's investment behavior.

The population of this study consists of all Generation Z individuals residing in DKI Jakarta. The selection of DKI Jakarta is based on its characteristics as the center of economic and investment activities in Indonesia. The sampling technique used is non-probability sampling with a purposive sampling approach, where respondents are selected based on specific criteria relevant to the research objectives (Sekaran, U., & Bougie 2016). The criteria for respondents include: (1) aged 13–28 years (Generation Z), (2) residing in DKI Jakarta, (3) having an income, (4) being a retail investor with an active securities account, and (5) having conducted stock transactions at least twice within the past two years. Based on calculations using the Slovin formula with a 5%

margin of error, the minimum sample size required for this study is 400 respondents.

The data used in this study consist of both primary and secondary data. Primary data are collected through the distribution of online questionnaires using Google Forms, employing a 5-point Likert scale ranging from strongly disagree to strongly agree. Meanwhile, secondary data are obtained from various sources, including academic journals, official reports, and relevant literature. The data collection process is conducted by distributing questionnaires across multiple social media platforms, such as Twitter/X, Instagram Ads, Threads, and LinkedIn.

The measurement of variables in this study is based on constructs adopted from previous research. The independent variables include herding behavior, overconfidence, and risk tolerance, while the dependent variable is investment decision, with financial literacy acting as the moderating variable. All variables are measured using reflective indicators. Herding behavior is measured using indicators such as volume of trading, choice of stocks, speed of herding, and speed of trading (Kengatharan 2014). Overconfidence is measured through the dimensions of overprecision, overplacement, and overestimation (Merkle, 2017). Risk tolerance is measured using indicators such as complexity/difficulty, comfort with risky assets, risk–loss association, and luck versus control (Kannadhasan et al. 2016). Financial literacy is measured based on understanding of general financial concepts, investment, savings, and debt (Volpe 1998). Meanwhile, investment decision is measured using indicators such as investment rate of return, investment risk, and investment period (Safitri 2025).

Data analysis is conducted using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the assistance of SmartPLS 4.0 software. The PLS method is chosen due to its predictive nature, flexibility in handling complex models, and its ability to operate without requiring normally distributed data (Hair et al. 2022). The analysis is carried out in two main stages: the outer model and the inner model.

The reflective measurement model was evaluated in terms of convergent validity, discriminant validity, and reliability. Convergent validity was established when indicator loadings exceeded 0.70 and the Average Variance Extracted (AVE) was above 0.50. Discriminant validity was assessed using the Heterotrait–Monotrait Ratio (HTMT), with values below 0.90 indicating adequate discriminant validity. Reliability was evaluated using Cronbach's alpha and composite

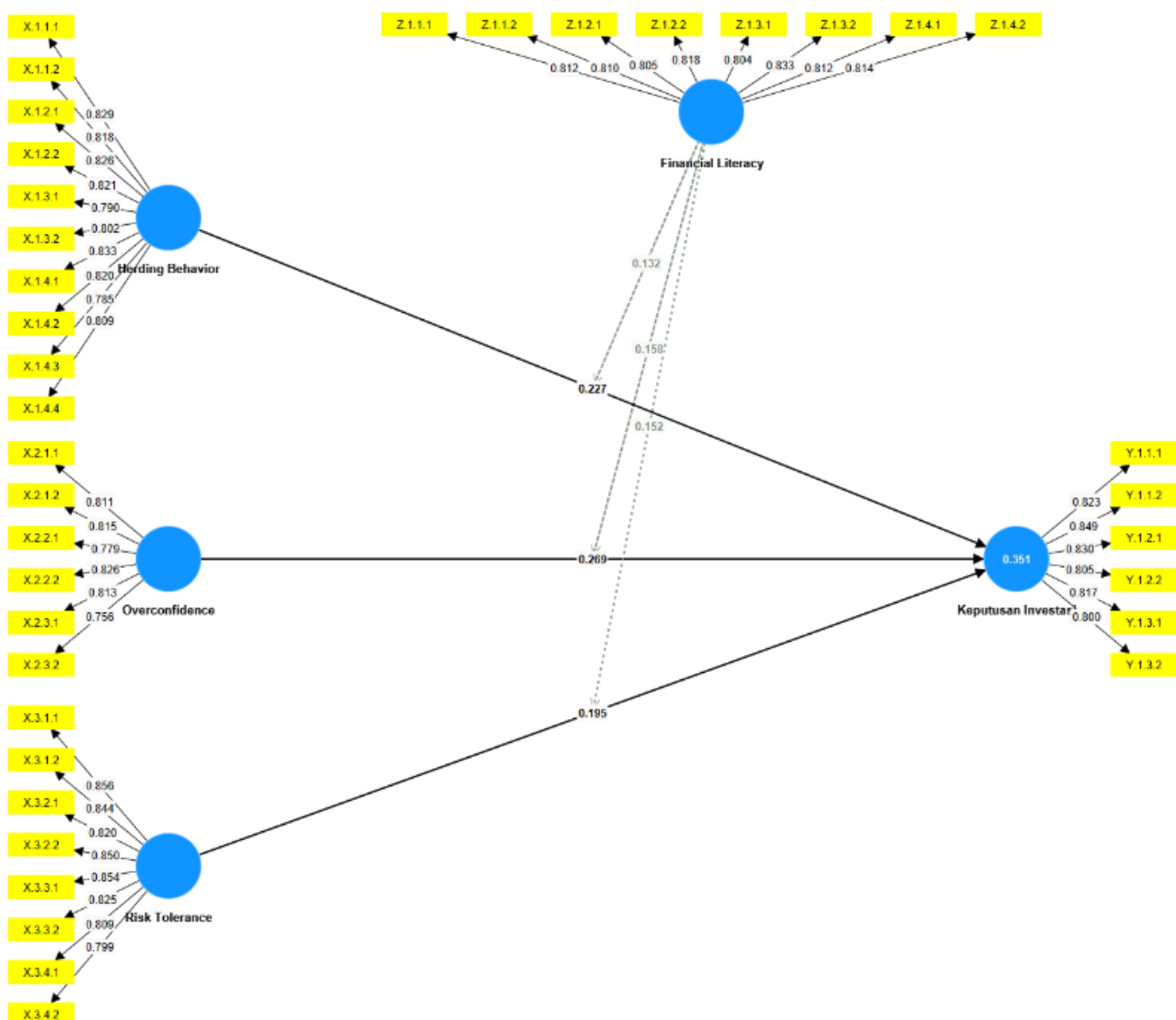
reliability, with acceptable values ranging from 0.70 to 0.95 (Hair et al. 2022; Hair et al. 2019).

The structural model was assessed through the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and path coefficients. Effect sizes of 0.02, 0.15, and 0.35 indicate small, medium, and large effects, respectively, while Q^2 values greater than zero indicate predictive relevance. Hypothesis testing was conducted using the bootstrapping procedure, with significance determined by t-values and p-values. R^2 values of 0.75, 0.50, and 0.25 indicate substantial, moderate, and weak explanatory power, respectively (Hair et al. 2022; Hair et al. 2019).

RESULTS & DISCUSSION

A total of 546 questionnaires were collected through the survey distribution process. After screening the responses based on the predetermined research criteria, 421 valid responses were retained and subsequently analyzed. The data obtained from respondents through questionnaire distribution were subsequently processed and analyzed using SmartPLS 4 software. This study aims to examine the extent to which herding behavior, overconfidence, and risk tolerance influence investment decisions, with financial literacy serving as a moderating variable among Generation Z in DKI Jakarta.

Outer Model



Source: Processed Data (2026)

Convergent Validity**Table 1. Factor Loading**

Variable	Item	CITC	Results
Herding Behavior	X.1.1.1	0,829	Valid
	X.1.1.2	0,818	Valid
	X.1.2.1	0,826	Valid
	X.1.2.2	0,821	Valid
	X.1.3.1	0,790	Valid
	X.1.3.2	0,802	Valid
	X.1.4.1	0,833	Valid
	X.1.4.2	0,820	Valid
Overconfidence	X.1.4.3	0,785	Valid
	X.1.4.4	0,809	Valid
	X.2.1.1	0,811	Valid
	X.2.1.2	0,815	Valid
	X.2.2.1	0,779	Valid
	X.2.2.2	0,826	Valid
	X.2.3.1	0,813	Valid
	X.2.3.2	0,756	Valid
Risk Tolerance	X.3.1.1	0,856	Valid
	X.3.1.2	0,844	Valid
	X.3.2.1	0,820	Valid
	X.3.2.2	0,850	Valid
	X.3.3.1	0,854	Valid
	X.3.3.2	0,825	Valid
	X.3.4.1	0,809	Valid
	X.3.4.2	0,799	Valid
Financial Literacy	Z.1.1.1	0,812	Valid
	Z.1.1.2	0,810	Valid
	Z.1.2.1	0,805	Valid
	Z.1.2.2	0,818	Valid
	Z.1.3.1	0,804	Valid
	Z.1.3.2	0,833	Valid
	Z.1.4.1	0,812	Valid
	Z.1.4.2	0,814	Valid
Keputusan Investasi	Y.1.1.1	0,823	Valid
	Y.1.1.2	0,849	Valid
	Y.1.2.1	0,830	Valid
	Y.1.2.2	0,805	Valid
	Y.1.3.1	0,817	Valid
	Y.1.3.2	0,800	Valid

Source: Processed Data (2026)

The results of data processing indicate that all questionnaire items meet the factor loading criteria, ranging from 0.7 to 0.8, with the majority

of items demonstrating high levels of correlation as their values exceed 0.7.

Table 2. Average Variance Extracted (AVE)

Variable	Average Variance Extracted (AVE)
Herding Behavior	0.662
Overconfidence	0.662
Risk Tolerance	0.674
Financial Literacy	0.641
Keputusan Investasi	0.693

Source: Processed Data (2026)

Table 2 indicates that the Average Variance Extracted (AVE) values derived from the SmartPLS 4 analysis exceed the threshold of 0.5.

Therefore, all constructs in this study satisfy the criteria for convergent validity.

Discriminant Validity

Table 3. Cross Loading

Item	Herding Behavior	Overconfidence	Risk Tolerance	Keputusan Investasi	Financial Literacy
X.1.1.1	0.829	0.233	0.160	0.304	-0.060
X.1.1.2	0.818	0.120	0.074	0.286	-0.118
X.1.2.1	0.826	0.205	0.162	0.311	-0.128
X.1.2.2	0.821	0.099	0.125	0.240	-0.099
X.1.3.1	0.790	0.204	0.051	0.209	-0.050
X.1.3.2	0.802	0.136	0.087	0.209	-0.084
X.1.4.1	0.833	0.158	0.023	0.268	-0.076
X.1.4.2	0.820	0.128	0.120	0.190	-0.075
X.1.4.3	0.785	0.187	0.021	0.234	-0.067
X.1.4.4	0.809	0.111	0.139	0.230	-0.116
X.2.1.1	0.229	0.811	0.162	0.324	-0.061
X.2.1.2	0.202	0.815	0.186	0.358	-0.136
X.2.2.1	0.060	0.779	0.022	0.341	0.020
X.2.2.2	0.214	0.826	0.119	0.298	-0.058
X.2.3.1	0.206	0.813	0.184	0.353	-0.139
X.2.3.2	0.033	0.756	0.006	0.310	0.053
X.3.1.1	0.125	0.173	0.856	0.282	0.036
X.3.1.2	0.079	0.081	0.844	0.256	-0.076
X.3.2.1	0.102	0.098	0.820	0.198	0.035
X.3.2.2	0.117	0.179	0.850	0.265	0.102
X.3.3.1	0.099	0.083	0.854	0.270	-0.101
X.3.3.2	0.163	0.128	0.825	0.213	0.075
X.3.4.1	0.048	0.101	0.809	0.183	0.037
X.3.4.2	0.065	0.101	0.799	0.232	-0.046
Y.1.1.1	0.249	0.307	0.182	0.823	-0.152
Y.1.1.2	0.301	0.333	0.294	0.849	-0.053
Y.1.2.1	0.231	0.415	0.244	0.830	-0.064
Y.1.2.2	0.230	0.290	0.249	0.805	-0.212
Y.1.3.1	0.309	0.407	0.226	0.817	-0.104
Y.1.3.2	0.198	0.261	0.227	0.800	-0.125
Z.1.1.1	-0.064	0.002	0.011	-0.084	0.812
Z.1.1.2	-0.111	-0.009	0.043	-0.080	0.810
Z.1.2.1	-0.064	-0.003	-0.005	-0.079	0.805
Z.1.2.2	-0.128	-0.053	0.038	-0.099	0.818
Z.1.3.1	-0.079	-0.078	-0.037	-0.151	0.804
Z.1.3.2	-0.090	-0.081	-0.015	-0.147	0.833
Z.1.4.1	-0.147	-0.098	0.002	-0.096	0.812
Z.1.4.2	-0.040	-0.082	0.034	-0.121	0.814

Source: Processed Data (2026)

Table 3 displays the results of the cross-loading analysis. The highlighted cells indicate that each indicator exhibits higher loadings on its

corresponding construct than on other constructs. Thus, all constructs satisfy the criteria for discriminant validity.

Table 4. Fornell-Lacker & Latent Variable Corellations

Variabel	Financial Literacy	Herdng Behavior	Keputusan Investasi	Overconfidence	Risk Tolerance	AVE
Financial Literacy	1.000	-0.109	-0.140	-0.070	0.006	0.813
Herdng Behavior	-0.109	1.000	0.312	0.198	0.121	0.814
Keputusan Investasi	-0.140	0.312	1.000	0.415	0.290	0.821
Overconfidence	-0.070	0.198	0.415	1.000	0.144	0.800
Risk Tolerance	0.006	0.121	0.290	0.144	1.000	0.832

Source: Processed Data (2026)

Table 4 reports the Fornell–Larcker diagonal values exceed the inter-construct criterion, with the square root of the Average Variance Extracted (AVE) presented in bold. The requirements for discriminant validity.

Table 5. HTMT Test

	Financial Literacy	Herdng Behavior	Keputusan Investasi	Overconfidence
Herdng Behavior	0.119			
Keputusan Investasi	0.148	0.326		
Overconfidence	0.114	0.213	0.454	
Risk Tolerance	0.083	0.130	0.308	0.166

Source: Processed Data (2026)

Discriminant validity is established using the Heterotrait–Monotrait Ratio (HTMT), with a threshold value of less than 0.90 (Hair et al. 2019b). As shown in Table 5, all constructs

demonstrate HTMT values below this threshold, indicating that discriminant validity is achieved for all constructs in this study.

Reability Test**Table 6. Cronbach's Alpha and Composite Reliability**

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)	Results
Financial Literacy	0.928	0.949	0.940	0.662	Reliable
Herdng Behavior	0.944	0.950	0.951	0.662	Reliable
Keputusan Investasi	0.903	0.908	0.925	0.674	Reliable
Overconfidence	0.888	0.889	0.914	0.641	Reliable
Risk Tolerance	0.937	0.944	0.947	0.693	Reliable

Source: Processed Data (2026)

Table 6 indicates that the Cronbach's Alpha and Composite Reliability values for all constructs exceed the recommended threshold of 0.7. This suggests that all measurement items are reliable and can be retained in the outer model, as

they exhibit strong internal consistency and reliability.

Inner Model**F Square / Effect Size**

Tabel 7. F Square (effect size)

Variabel	Nilai F Square
Herding Behavior-> Keputusan Investasi	0.073
Overconfidence -> Keputusan Investasi	0.099
Risk Tolerance -> Keputusan Investasi	0.056
Financial Literacy x Herding Behavior	0.045
Financial Literacy x Overconfidence	0.037
Financial Literacy x Risk Tolerance	0.043

Source: Processed Data (2026)

Tabel 7. menunjukkan hasil nilai F Square dengan penjelasan sebagai berikut:

- The effect of herding behavior on investment decisions is 0.073, indicating a small effect size.
- The effect of overconfidence on investment decisions is 0.099, indicating a small effect size.
- The effect of risk tolerance on investment decisions is 0.056, indicating a small effect size.
- Financial literacy, as a moderating variable in the relationship between herding behavior and investment decisions, has an f^2 value of 0.045, indicating a small effect size.
- Financial literacy, as a moderating variable in the relationship between overconfidence and investment decisions, has an f^2 value of 0.037, indicating a small effect size.
- Financial literacy, as a moderating variable in the relationship between risk tolerance and investment decisions, has an f^2 value of 0.043, indicating a small effect size.

 Q^2 Predictive Relevance**Tabel 8. Q^2 Predictive Relevance**

Dependent Variable	Q^2predict
Keputusan Investasi	0.291

Source: Processed Data (2026)

Table 8 indicates that the Q^2 value for the investment decision variable is 0.291 (29.1%). Since the Q^2 value is greater than zero, it can be concluded that the model demonstrates adequate

predictive relevance, and the constructs possess good predictive capability.

Hypothesis Testing and Statistical Significance**Tabel 9. Path Coefficient Bootstrapping Direct Effect**

Variable	Original sample (O)	T statistics	P values
Herding Behavior -> Keputusan Investasi	0.227	3.691	0.000
Overconfidence -> Keputusan Investasi	0.269	4.537	0.000
Risk Tolerance -> Keputusan Investasi	0.195	3.245	0.001
Financial Literacy x Herding Behavior -> Keputusan Investasi	0.132	2.526	0.006
Financial Literacy x Overconfidence -> Keputusan Investasi	0.158	2.282	0.011
Financial Literacy x Risk Tolerance -> Keputusan Investasi	0.152	2.285	0.011

Source: Processed Data (2026)

Based on Table 9, all hypotheses in this study are accepted, as they exhibit t-statistics > 1.96 and p-values ≤ 0.05 . This indicates that all relationships among the variables in the research model are statistically significant. Specifically, herding behavior has a positive and significant effect on investment decisions, with a coefficient value of 0.227 (t-statistics = 3.691; p-values =

0.000). Furthermore, overconfidence also demonstrates a positive and significant effect, with a coefficient of 0.269 (t-statistics = 4.537; p-values = 0.000). Meanwhile, risk tolerance shows a positive and significant influence on investment decisions, with a coefficient of 0.195 (t-statistics = 3.245; p-values = 0.001).

In addition to the direct effects, financial

literacy is proven to significantly and positively moderate the relationship between behavioral factors and investment decisions. This is evidenced by the moderating effect between herding behavior and investment decisions, with a coefficient of 0.132 (t-statistics = 2.526; p-values = 0.006), overconfidence with a coefficient of 0.158 (t-statistics = 2.282; p-values = 0.011), and risk tolerance with a coefficient of 0.152 (t-statistics = 2.285; p-values = 0.011). These findings indicate that financial literacy strengthens the relationship between behavioral factors and investment decisions; thus, higher levels of financial literacy amplify the influence of psychological factors on investment decisions.

The Effect of Herding Behavior on Investment Decisions

The statistical results indicate that herding behavior has a positive and significant effect on investment decisions, with a coefficient value of 0.227, a t-statistic of $3.691 > 1.65$, and a p-value of $0.000 \leq 0.05$. This finding suggests that the stronger the tendency of investors to follow the decisions of the majority, the greater their likelihood of making investment decisions.

This result is consistent with behavioral finance theory, which posits that investment decisions are not entirely rational but are influenced by psychological and social factors (Ackert, Lucy F.; Deaves 2009). Under conditions of uncertainty and limited information, investors tend to rely on group behavior as a reference in decision-making. Furthermore, signalling theory (Ross 1977) explains that the actions of other investors are perceived as signals regarding investment prospects, thereby encouraging individuals to follow similar patterns.

In the context of Generation Z, herding behavior is reflected in the tendency to select investment instruments that are trending on social media or within investment communities (Ahmed and Noreen 2021). This indicates that investment decisions are often driven more by market sentiment than by fundamental analysis.

These findings are in line with prior studies (Adielyani and Mawardi 2020; Adil et al. 2022), which found that herding behavior significantly influences investment decisions. However, this result differs from (Adiputra et al. 2023), who reported no significant effect, possibly due to differences in respondent characteristics and levels of financial literacy.

The Effect of Overconfidence on Investment Decisions

The analysis shows that overconfidence has a positive and significant effect on investment decisions, with a coefficient of 0.269, a t-statistic

of $4.537 > 1.65$, and a p-value of $0.000 \leq 0.05$. This implies that higher levels of investor confidence in their abilities and knowledge increase their propensity to make investment decisions.

According to (Kartini, & Nugraha 2020) overconfidence refers to a condition in which individuals possess excessive belief in their own abilities, leading them to underestimate risks. From a behavioral finance perspective, this can manifest as overprecision, or excessive confidence in the accuracy of one's information (Piehlmaier 2023).

Among Generation Z, easy access to digital information may further enhance confidence in investment decision-making, although it also increases the potential for biased risk assessment. Investors may believe that the information they possess is sufficient, without conducting thorough evaluations.

These findings are consistent with previous studies (Adil et al. 2022; Ainia and Lutfi 2019), which demonstrate a significant effect of overconfidence on investment decisions. However, they contradict findings by (Hayat, A., & Anwar 2016; Helena, Dua, and Se 2021), who reported no significant effect, likely due to differences in respondent characteristics and research contexts.

The Effect of Risk Tolerance on Investment Decisions

The results indicate that risk tolerance has a positive and significant effect on investment decisions, with a coefficient of 0.195, a t-statistic of $3.245 > 1.65$, and a p-value of $0.001 \leq 0.05$. This suggests that higher levels of risk tolerance lead to a greater likelihood of making investment decisions.

Risk tolerance refers to an individual's ability to withstand and accept investment risks (Soleha 2018). Investors with high risk tolerance tend to exhibit risk-seeking behavior, preferring high-risk investments to achieve higher returns (Halim 2005).

This finding is also supported by prospect theory, which explains that investment decisions are influenced by individual risk preferences. Investors with higher risk tolerance are generally more willing to face uncertainty in pursuit of optimal returns.

The results support prior studies (Adiputra 2021; Ainia and Lutfi 2019), which found a significant effect of risk tolerance on investment decisions. However, they differ from (Doraresta and Tokan 2025), who reported no significant effect, possibly due to differences in investor characteristics.

The Moderating Effect of Financial Literacy on the Relationship between Herding Behavior and Investment Decisions

The analysis indicates that financial literacy positively and significantly moderates the relationship between herding behavior and investment decisions, with a coefficient of 0.132, a t-statistic of $2.526 > 1.65$, and a p-value of $0.006 \leq 0.05$.

This finding suggests that financial literacy does not necessarily reduce herding behavior but may instead strengthen it. From a behavioral finance perspective, investors with higher financial literacy may be more confident in interpreting market signals (Hayat, A., & Anwar 2016).

This result is consistent with (Koma and Jatningsih 2024), who found that financial literacy strengthens the relationship between herding behavior and investment decisions. However, (Adil et al. 2022) suggest that this moderating effect may vary depending on investor characteristics, such as gender.

The Moderating Effect of Financial Literacy on the Relationship between Overconfidence and Investment Decisions

The results show that financial literacy strengthens the effect of overconfidence on investment decisions, with a coefficient of 0.158, a t-statistic of $2.282 > 1.65$, and a p-value of $0.011 \leq 0.05$.

According to (Bado et al. 2023), financial literacy enhances investors' understanding of financial instruments, which may increase their sense of competence and confidence. In such conditions, financial literacy may serve as a rational justification for decision-making.

These findings are consistent with (Ahmad and Shah 2020), who reported that financial literacy moderates the relationship between behavioral biases and investment decisions. However, this result contradicts (Hayat, A., & Anwar 2016), who found no moderating effect.

The Moderating Effect of Financial Literacy on the Relationship between Risk Tolerance and Investment Decisions

The analysis shows that financial literacy strengthens the relationship between risk tolerance and investment decisions, with a coefficient of 0.152, a t-statistic of $2.285 > 1.65$, and a p-value of $0.011 \leq 0.05$.

Investors with high risk tolerance supported by strong financial literacy are more likely to make rational and structured investment decisions, particularly in terms of diversification and risk management.

This finding aligns with (Koma and Jatningsih 2024), who argue that financial literacy improves the quality of investment decision-making. However, (Adil et al. 2022) reported no moderating effect, indicating that the role of

financial literacy may depend on specific investor characteristics.

CONCLUSIONS AND SUGGESTIONS

Conclusion

This study aims to analyze the effects of herding behavior, overconfidence, and risk tolerance on investment decisions, with financial literacy as a moderating variable among Generation Z in DKI Jakarta.

The results indicate that all psychological variables herding behavior, overconfidence, and risk tolerance have a positive and significant influence on investment decisions. Furthermore, financial literacy is found to moderate and strengthen the relationships between these variables and investment decisions.

Overall, these findings suggest that investment decisions among Generation Z are not solely driven by rational considerations but are also influenced by psychological factors and the level of financial literacy.

SUGGESTIONS

1. Suggestions for Future Research

Future studies are encouraged to incorporate additional behavioral bias variables to enrich the analysis, such as risk perception, locus of control, or the influence of social media. Moreover, the inclusion of other moderating variables is recommended to develop a more comprehensive research model in explaining investment behavior, particularly among younger generations in the digital era.

2. Suggestions for Investors

Investors, particularly those from Generation Z, are expected to recognize and manage psychological biases in investment decision-making. Enhancing financial literacy is essential to ensure that investment decisions are not solely based on market trends but are also supported by rational and well-planned analysis, thereby enabling the development of more optimal and sustainable investment portfolios.

REFERENCES

- Ackert, Lucy F.; Deaves, Richard. 2009. *Behavioral Finance: Psychology, Decision-Making, and Markets*. Cengage Learning.
- Adielyani, Dea, and Wisnu Mawardi. 2020. "The Influence of Overconfidence, Herding Behavior, and Risk Tolerance on Stock Investment Decisions: The Empirical Study of Millennial Investors in Semarang City." *Jurnal Maksipreneur: Manajemen, Koperasi, Dan Entrepreneurship* 10(1):89. doi:10.30588/jmp.v10i1.691.

- Adil, Mohd, Yogita Singh, and Mohd Shamim Ansari. 2022. "How Financial Literacy Moderate the Association between Behaviour Biases and Investment Decision?" *Asian Journal of Accounting Research* 7(1):17–30. doi:10.1108/AJAR-09-2020-0086.
- Adiputra, I. Gede. 2021. "The Influence of Overconfidence, Representative Bias, and Risk Tolerance in Investment Decision Making: Evidence on Stock Investors in Indonesia." *Journal of Hunan University (Natural Sciences)* 48(4):195–205.
- Adiputra, I. Gede, Nur Ainun Bangun, and Rivaldy Bryan Jullian. 2023. "The Effect of Overconfidence Bias, Herding Behavior and Experienced Regret on Investment Decision Making on the Indonesia Stock Exchange." *Journal of Economics, Finance and Management Studies* 06(05):2339–48. doi:10.47191/jefms/v6-i5-55.
- Ahmad, Maqsood, and Syed Zulfiqar Ali Shah. 2020. "Overconfidence Heuristic-Driven Bias in Investment Decision-Making and Performance: Mediating Effects of Risk Perception and Moderating Effects of Financial Literacy." *Journal of Economic and Administrative Sciences* 38(1):60–90. doi:10.1108/JEAS-07-2020-0116.
- Ahmed, Zaheer, and Umara Noreen. 2021. "Role of Behavioral Determinants for Investment Decision Making." *Asia-Pacific Social Science Review* 21(2):48–62. doi:10.59588/2350-8329.1367.
- Ainia, Nadya Septi Nur, and Lutfi Lutfi. 2019. "The Influence of Risk Perception, Risk Tolerance, Overconfidence, And." *Journal of Economics, Business & Accountancy Ventura* 21(3):401–13.
- Ajaib. 2025. "IHSG Trading Halt 30 Menit Setelah Turun 5%."
- Asosiasi Penyelenggara Jasa Internet Indonesia (APJII). 2024. "APJII Jumlah Pengguna Internet Indonesia Tembus 221 Juta Orang."
- Bado, Basri, Muhammad Hasan, Thamrin Tahir, and Sitti Hasbiah. 2023. "How Do Financial Literacy, Financial Management Learning, Financial Attitudes and Financial Education in Families Affect Personal Financial Management in Generation Z?" *International Journal of Professional Business Review* 8(5):e02001. doi:10.26668/businessreview/2023.v8i5.2001.
- Doraresta, Agnes, and Khatarina Tokan. 2025. "Department of Management, Faculty of Business and Management, Universitas Internasional Batam - Indonesia." 18(2):1127–46.
- Fama, Eugene F. 1970. "Efficient Capital Markets: A Review of Theory and Empirical Work." *The Journal of Finance* 25(2):383–417. doi:10.2307/2325486.
- Hair, Joseph F., G. Tomas M. Hult, Christian M. Ringle, and Marko Sarstedt. 2022. *A Primer on Partial Least Squares Structural Equation Modeling. In Long Range Planning*. Springer.
- Hair, Joseph F., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle. 2019a. *MULTIVARIATE DATA ANALYSIS Multivariate Data Analysis*.
- Hair, Joseph F., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle. 2019b. "When to Use and How to Report the Results of PLS-SEM." *European Business Review* 31(1):2–24. doi:10.1108/EBR-11-2018-0203.
- Halim, A. 2005. *Analisa Investasi*. Salemba Empat.
- Hayat, A., & Anwar, M. 2016. "Impact of Behavioral Biases on Investment Decision Moderating Role Financial Literacy." doi:https://doi.org/10.2139/ssrn.2842821.
- Helena, Maria, Carolinda Dua, and Hyronimus Se. 2021. "Financial Literacy, Overconfidence, Risk Tolerance and Public Investment Decision of Ende Residents, East Nusa Tenggara Province of Indonesia." *Jurnal Akuntansi, Manajemen Dan Ekonomi* 23(4):29–37. doi:10.32424/1.jame.2021.23.4.4865.
- Herlina, Herlina, Bram Hadianito, Jacinta Winarto, and Niken Angginia Nastiti Suwarno. 2020. "The Herding and Overconfidence Effect on the Decision of Individuals to Invest Stocks." *Journal of Economics and Business* 3(4). doi:10.31014/aior.1992.03.04.288.
- Kannadhasan, M., S. Aramvalathan, S. K. Mitra, and Vinay Goyal. 2016. "Relationship between Biopsychosocial Factors and Financial Risk Tolerance: An Empirical Study." *Vikalpa* 41(2):117–31. doi:10.1177/0256090916642685.
- Kartini, & Nugraha, N. F. 2020. "Pengaruh Illusions of Control, Overconfidence Dan Emotion Terhadap Pengambilan Keputusan Investasi Pada Investor Di Yogyakarta." *Jurnal Manajemen Universitas Islam Indonesia* 5(2):123–135.
- Kengatharan, Lingesiya. 2014. "The Influence of Behavioral Factors in Making Investment Decisions and Performance: Study on Investors of Colombo Stock Exchange, Sri Lanka." 6(1):1–23. doi:10.5296/ajfa.v6i1.4893.
- Kuangan, Otoritas Jasa. 2023. *PERATURAN*

OTORITAS JASA KEUANGAN REPUBLIK INDONESIA NOMOR 3 TAHUN 2023.

- Koma, Desi Riza Ayu, and Dyah Ekasari Sekar Jatningsih. 2024. "The Effect of Overconfidence Bias, Risk Tolerance, and Herding Bias on Stock Investment Decisions with Financial Literacy as a Moderation Variable." *KnE Social Sciences* 2024:303–36. doi:10.18502/kss.v9i21.16718.
- KSEI. 2025. "Data Statistik KSEI." https://www.ksei.co.id/publications/Data_Statistik_KSEI.
- Lao, Paulo, and Harinder Singh. 2012. "Herding Behaviour in the Chinese and Indian Stock Markets." *SSRN Electronic Journal* 1–28. doi:10.2139/ssrn.1937956.
- Lusardi, Annamaria, Olivia S. Mitchell, and Vilsa Curto. 2014. "Financial Literacy and Financial Sophistication in the Older Population." *Journal of Pension Economics and Finance* 13(4):347–66. doi:10.1017/S1474747214000031.
- Mahmood, Faiq, Rabia Arshad, Shoaib Khan, Alia Afzal, and Mohsin Bashir. 2024. "Impact of Behavioral Biases on Investment Decisions and the Moderation Effect of Financial Literacy; an Evidence of Pakistan." *Acta Psychologica* 247(September 2023):104303. doi:10.1016/j.actpsy.2024.104303.
- Merkle, Christoph. 2017. "Financial Overconfidence over Time: Foresight, Hindsight, and Insight of Investors." *Journal of Banking and Finance*. doi:10.1016/j.jbankfin.2017.07.009.
- Piehlmaier, Dominik M. 2023. "The One-Man Show: The Effect of Joint Decision-Making on Investor Overconfidence." *Journal of Consumer Research* 50(2):426–46. doi:10.1093/jcr/ucac054.
- Pompian, Michael M. 2012. *Behavioral Finance and Wealth Management*. John Wiley & Sons, Inc.
- Ross, Stephen A. 1977. "The Determination of Financial Structure : The Incentive-Signalling Approach."
- Safitri, Heni. 2025. "The Role of Social Media and Social Interaction in Investment Decision Making in the Digital Era: The Mediating Role of Risk Tolerance." *Journal of Hunan University Natural Sciences* 52(6). doi:10.55463/issn.1674-2974.52.6.6.
- Sekaran, U., & Bougie, R. 2016. *Research Methods for Business: A Skill Building Approach (7th Ed.)*. Wiley.
- Soleha, Erin. 2018. "Overconfidence, Risk Tolerance, Dan Pertimbangan Faktor Fundamental Dalam Pengambilan Keputusan Investasi Di Pasar Modal (Studi Pada Investor Saham Di Galeri Investasi Fakultas Ekonomi Universitas Islam Indonesia Yogyakarta)." 3–66.
- Suresh, G. 2021. "Impact of Financial Literacy and Behavioural Biases on Investment Decision-Making." (August). doi:10.1177/23197145211035481.
- Volpe, Haiyang Chen and Ronald P. 1998. "An Analysis of Personal Financial Literacy Among College Students." 7(2):107–28.
- Yoong, J., & Ferreira, V. R. D. M. 2013. *Improving Financial Education Effectiveness through Behavioural Economics: OECD Key Findings and Way Forward*. OECD Publishing, 1, 1926–1982.