

The Effects of Overconfidence and Risk Perception on Generation Z Stock Investment Decisions: The Moderating Role of Financial Literacy

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Abstract

This study aims to examine the effects of overconfidence and risk perception on the stock investment decisions of Generation Z and to investigate whether financial literacy moderates these relationships. A quantitative research method was used, using logistic regression analysis. A total of 212 Generation Z respondents from Universitas Klabat in Indonesia were selected through purposive sampling. The findings indicate that overconfidence does not have a significant effect on investment decisions, while risk perception has a positive effect on investment decisions. Furthermore, financial literacy does not moderate the relationship between overconfidence and investment decisions, however, it does moderate the relationship between risk perception and investment decisions. This study contributes to the financial literature by demonstrating the roles of behavioural biases and financial knowledge in influencing the investment decisions of Generation Z.

Keywords: *behavioural finance, overconfidence, risk perception, financial literacy, investment decisions, Generation Z*

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INTRODUCTION

Investment is an activity undertaken with the objective of generating returns. Investors are presented with various alternatives when making investment choices. In decision-making theory, the concept of the rational investor (individual) suggests that, when making decisions, the chosen action is the one that maximizes expected utility. Rational investors are expected to conduct thorough analyses when making investment decisions. However, in practice, investors do not always behave rationally when making investment decisions. Investors are influenced by behavioral factors in addition to rational considerations, as evidenced by several empirical studies (Gill et al., 2018). These findings suggest that investors may exhibit psychological biases that lead to irrational behavior by generating emotional responses during the investment decision-making process (N. Barberis & Thaler, 2003).

In relation to irrational investment decisions, irrationality may lead to biased decision-making. Bias refers to a tendency or deviation from the truth in data collection, data analysis, interpretation, and publication, which may result in

inaccurate conclusions (Shefrin & Belotti, 2007). Several psychological biases may influence investment decision-making (Bakar & Yi, 2016), one of which is overconfidence.

Overconfidence refers to excessive self-confidence that reflects the extent to which individuals place undue trust in their own experience and abilities (Pradhana, 2018). Overconfidence may lead investors to develop excessive belief in their judgments, resulting in overly optimistic predictions regarding stock prices without adequately considering the associated risks.

Another factor that may contribute to irrational behavior in investment decision-making is high risk perception without proper risk analysis (Khairunizam & Isbanah, 2019). Risk perception is defined as a subjective evaluation made by investors that depends on the personality of each individual, and it plays an important role in investment decisions. When individuals perceive risks as relatively low and are willing to undertake high levels of risk (risk takers) without considering the actual level of risk involved, their behavior may be regarded as irrational and may potentially lead to inappropriate investment decisions.

Generation Z is the generation that was born between 1997 and 2012. Compared to previous older generations, Generation Z tends to exhibit higher levels of self-confidence and greater willingness to take risks (Puspawati & Yohanda, 2022). However, excessive self-confidence and risk-taking behavior may result in biased and less accurate investment decisions. This is consistent with the findings of Humairo and Panuntun (2022), who demonstrated that overconfidence and risk perception influence the investment decisions of Generation Z.

This irrational behavior in investment decision-making may be mitigated through the improvement of financial literacy. According to Giesler and Veresiu (2014), financial literacy is defined as an individual's capacity to understand how financial processes function, how to manage and generate money, how to make investment decisions, and how individuals allocate their financial resources to assist others. Improved financial literacy may encourage more rational investment decisions and reduce the presence of bias in decision-making (Lionardo et al., 2025).

Considering the substantial potential of the investment market in Indonesia as one of the largest economies in South-East Asia and the significant size of the Generation Z investors (KSEI, 2022), Indonesia represents an appropriate setting for examining the influence of overconfidence and risk perception on the investment decisions of Generation Z. Furthermore, this study also explores whether the inclusion of financial literacy as a moderating variable may help reduce the irrational behavior of Generation Z in stock investment decision-making. Consequently, this study is expected to provide a significant contribution to understanding the factors influencing the stock investment decisions of Generation Z in Indonesia.

LITERATURE REVIEW

Expected Utility Theory

Expected Utility Theory is a hypothesis that explains how rational individuals make decisions under uncertainty. It states that people will choose among the options that are available to them, the one that maximizes their expected utility (von Neumann & Morgenstern, 1947). According to Al-Qibthya & Sari (2022), the rational decision-making approach suggests that individuals make decisions by considering the maximum possible benefits derived from available alternatives. In line with this

theory, investors are expected to be capable of analyzing the expected returns and risks of assets they intend to include in their investment portfolios by relying on their confidence, knowledge, and skills. Therefore, this theory serves as the foundation for explaining the influence of financial literacy on investment decisions.

Prospect Theory

Prospect Theory is a concept that integrates two distinct disciplines, namely economics and psychology (Kahneman & Tversky, 1979). This concept emerged as a critique of expected utility theory and contributed to the development of behavioral finance by providing new perspectives on financial behavior, particularly the notion that investors do not always behave rationally (Pradhana, 2018). In the field of finance, prospect theory is used to explain irrational market price movements and why markets often fail to reflect the intrinsic value of an investment (Barberis, 2013). Therefore, this theory serves as the underlying framework for explaining the influence of overconfidence and risk perception on investment decisions.

Investment

According to Tandelilin (2010), investment is defined as a commitment of funds or other resources made at the present time with the expectation of obtaining a series of benefits in the future. Investment decisions constitute one of the factors that influence firm value. Such decisions involve the allocation of funds for both short-term and long-term purposes, as well as the determination of funding sources originating from within and outside the company (Gustian, 2017).

Generation Z

According to Brown (2020), Generation Z refers to individuals born after 1995 and is often described as the post-millennial generation. Generation Z is recognized as a generation that grew up in the digital era, where technology has become an integral part of everyday life. They are frequently referred to as “digital natives” because they were born and raised amid rapid technological advancements such as the internet, social media, smartphones, and other digital technologies.

Based on the characteristics of Generation Z, this generation has developed and lived in an era of rapidly advancing digital technology, enabling them to possess better technological proficiency compared to previous generations. This condition may encourage Generation Z to exhibit overconfidence. Furthermore, the life-cycle theory suggests that younger individuals tend to be more willing to take higher risks because they have a longer time horizon to recover potential losses if their investments are unsuccessful (Modigliani & Brumberg, 1954). Consequently, Generation Z can be categorized as risk takers. Another factor contributing to the higher risk-taking tendency of Generation Z is their upbringing in the digitalization era and their easy access to technology. Their ability to access information and communicate efficiently may increase their self-confidence and encourage them to take greater risks in decision-making processes.

The Influence of Overconfidence on Stock Investment Decisions

Overconfidence may cause investors to misinterpret information conveyed by financial market participants and to underestimate existing expectations because they tend to overestimate their own abilities (Nofsinger, 2005). Investors who exhibit

overconfidence generally underestimate potential risks and fail to conduct adequate analysis before making decisions, resulting in investment decisions that are less accurate and biased. This supports prospect theory, which suggests that individuals do not always behave rationally in decision-making processes, as their decisions may also be influenced by factors such as overconfidence, emotions, and various other psychological factors.

H1: Overconfidence affects stock investment decisions.

The Influence of Risk Perception on Stock Investment Decisions

Risk perception refers to an individual's assessment of the risky situations they may encounter, and such assessments depend on the individual's psychological characteristics and personal circumstances (Pradikasari & Isbanah, 2018). Investors with high-risk perception tend to perceive investment risks as relatively low and are generally more willing to undertake high levels of risk in their investments. These investors typically prefer high-risk investment instruments and are psychologically prepared to face potential losses, thereby categorizing them as risk takers.

High-risk perception can be associated with prospect theory because the theory explains that individuals often behave irrationally in decision-making processes, resulting in decisions that may be inaccurate or biased (Wakker, 2010). When individuals exhibit high risk perception, they tend to perceive risks as low and undertake substantial risks (risk takers) without adequately considering the actual level of risk involved. Consequently, such behavior may be regarded as irrational and may potentially lead to inappropriate and biased investment decisions.

H2: Risk perception has a significant effect on stock investment decisions.

The Moderating Role of Financial Literacy in the Relationship between Overconfidence and Stock Investment Decisions

The impact of overconfidence can be highly detrimental, particularly in situations involving important and risk-related decision-making. In the context of overconfidence, financial literacy may help individuals recognize that the information and knowledge they possess regarding investments may be incomplete or excessively optimistic. This awareness can assist individuals in making more rational investment decisions.

On the other hand, individuals with insufficient financial literacy may be more susceptible to overconfidence and may consequently make investment decisions that are excessively risky or unrealistic. Therefore, financial literacy may serve as a moderating factor in the relationship between overconfidence and investment decisions. This is consistent with the findings of Ahmad and Shah (2022), who stated that financial literacy moderates the relationship between overconfidence and investment decisions.

H3: Financial literacy moderates the effect of overconfidence on investment decisions.

The Moderating Role of Financial Literacy in the Relationship between Risk Perception and Stock Investment Decisions

Risk perception refers to the manner in which individuals or groups perceive and evaluate the likelihood of a risk occurring and the potential consequences arising from that risk. Individuals with a high level of financial literacy are generally more

capable of understanding investment-related information and the associated risks, enabling them to conduct more effective risk evaluations and make more rational investment decisions.

In the context of high-risk perception, individuals with strong financial literacy tend to be more cautious and skeptical when making high-risk investment decisions. This statement is supported by the findings of Niazi and Malik (2020), who found that financial literacy has a moderating effect on the relationship between investment diversification and risk tendency.

Conceptual Framework

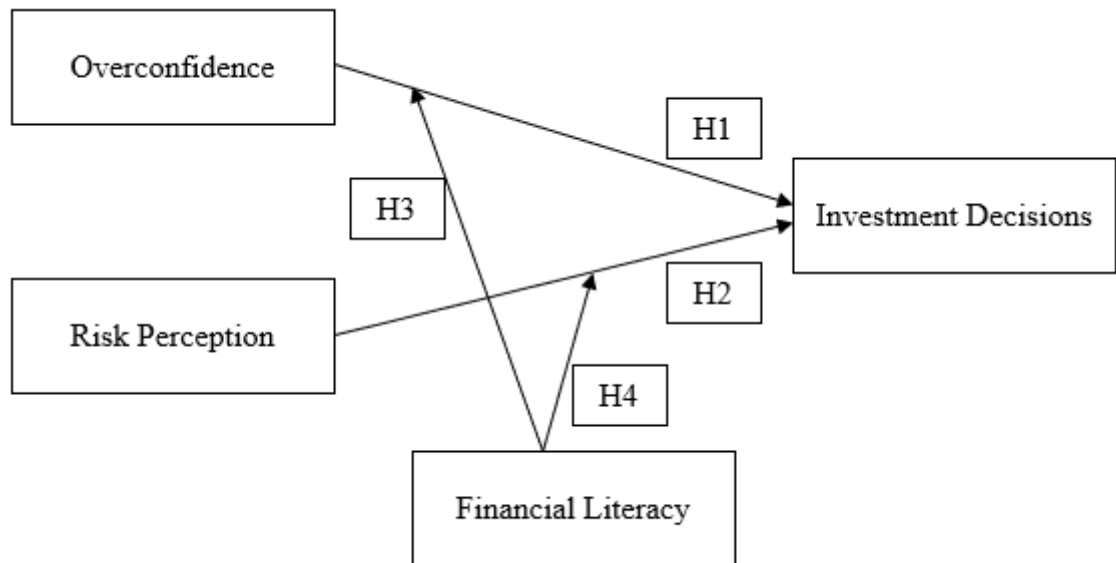


Figure 1. Conceptual Framework

METHODOLOGY

This study employed an informal quantitative research design for data collection and analysis. Quantitative research is a research approach that involves selecting samples from a larger population or samples to analyze the characteristics of the respective population or sample.

The sample used in this study consisted of students from the Faculty of Economics and Business at Universitas Klabat who are included in Generation Z. The study employed a non-probability sampling technique using purposive sampling methodology. Data were collected through a Google Forms questionnaire. The questionnaire was subsequently distributed, resulting in a total of 212 respondents completing the survey.

When calculating overconfidence, the respondents answered a series of questions, and then they predicted their score. If the predicted score is higher than the actual score, the respondents are deemed to be overconfident, and vice versa. For risk perception, a scoring system was used regarding the respondent's ability to perceive the risk that they are willing to take in terms of the length of investment, their risk profile, their financial condition before investing, and their investment knowledge before investing. Meanwhile, a Likert scale that consists of financial knowledge questions was used to calculate the financial literacy of the respondents.

Lastly, for investment decisions, the respondents will choose the type of investment they are willing to invest in.

The analytical tool employed in this study was logistic regression analysis. Logistic regression is a regression analysis technique used to examine whether independent variables can predict the likelihood of the occurrence of a dependent variable and to analyze the relationships among variables (Ghozali, 2006). Logistic regression analysis includes overall model evaluation (overall model fit), regression model feasibility testing (goodness-of-fit test), the coefficient of determination (Nagelkerke's R-squared), and the classification matrix (Ghozali, 2018). Furthermore, hypothesis testing was conducted using the Wald Test and the Omnibus Test of Model Coefficients.

RESULT AND DISCUSSION

Based on the data presented in Table 1 and Table 2, the respondents within the sample tended to demonstrate a relatively above-average level of overconfidence, as shown by the positive mean value of 8.82%. Overconfidence was found to be more prevalent among male respondents, as reflected by the higher average overconfidence score for males compared to females. Meanwhile, the average risk perception score measured within the sample was 11.723, indicating that respondents generally possessed a relatively high level of risk perception. Individuals who tended to exhibit greater risk-taking behavior were predominantly male respondents, as evidenced by the higher average risk perception score among males compared to females.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Overconfidence	212	-34%	57.60%	8.82%	.14548
Risk Perception	212	.00	20	11.723	4.46766
Financial Literacy	212	1	5	3.73	0.9213
Investment Decision	212	.00	1.00	.6651	.47307

Source: Processed data (2026)

The mean value of the financial literacy variable was 3.73, suggesting that respondents generally possessed a relatively good level of financial literacy. Female respondents were found to have better financial literacy capabilities than male respondents, as indicated by the higher average score among females. Regarding investment decisions, the mean value obtained was 0.6651, indicating that approximately 66.5% of the sample chose to invest in stocks, while the remaining respondents preferred to invest in other investment instruments. Furthermore, respondents who preferred stock investments tended to be male rather than female.

Table 2. Descriptive Statistics - Gender

Overconfidence		Risk Perception		Financial Literacy		Investment Decisions	
Male	Female	Male	Female	Male	Female	Male	Female
11.98%	6.70%	11.9853	11.5374	3.7192	3.7496	0.7176	0.6299

Source: Processed data (2026)

The F-test results shown in Table 3 have a p-value of less than 0.05 that indicates that the whole model is statistically significant. In other words, investment decisions are influenced by all the predictor variables that are included in the analysis.

Table 3. Hypothesis Test

Variable	Coefficient	t-test	Sig.
Overconfidence (H1)	-1.011	0.317	0.573
Risk Perception (H2)	6.172	8.807	0.003*
Financial Literacy	0.183	6.052	0.014*
Overconfidence * Financial Literacy (H3)	0.026	0.189	0.664
Risk Perception * Financial Literacy (H4)	-0.224	9.179	0.002*
Dependent Variable : Investment Decisions			
Constant	: -4.110		
F-test	: 13.737 (0.017)		
Adjusted R ²	: 0.087		

Source: Processed data (2026)

Based on the hypothesis testing results presented in Table 3, H1, which proposes that overconfidence influences investment decisions, is rejected since the probability value exceeded the significance threshold ($0.573 > 0.05$). In contrast, H2 is accepted, indicating that risk perception has a significant effect on investment decisions, as evidenced by the probability value being lower than the significance level ($0.003 < 0.05$). Furthermore, H3, which suggests that financial literacy moderates the relationship between overconfidence and investment decisions, is rejected because the probability value was greater than the significance level ($0.664 > 0.05$). Finally, H4 is accepted, demonstrating that financial literacy significantly moderates the relationship between risk perception and investment decisions, as indicated by the probability value being below the significance threshold ($0.02 < 0.05$).

The Influence of Overconfidence on Stock Investment Decisions

The study found that investment decision-making is not influenced by the overconfidence variable. This indicates that investors' investment decisions are not affected by the level of excessive self-confidence possessed by individuals or investors. Differences in respondents' investment preferences may explain this result. Based on the characteristics of the respondents in this study, 67% of respondents chose to invest in stocks, while the remaining respondents preferred to invest in other types of assets. Therefore, even if individuals tend to exhibit overconfidence, the type of investment they choose may vary and is not necessarily limited to stocks.

Furthermore, excessive self-confidence may not always be a determining factor in an individual's decision-making process. This insignificant result is consistent with the findings of Wulandari and Iramani (2014). According to the findings of their study, overconfidence does not necessarily influence an individual's decision-making process. The study suggests that confidence is a subjective measure of an individual's investment knowledge and ability. Therefore, it is reasonable to conclude that overconfidence does not always influence investment decisions. The theory supporting these findings is expected utility theory, which suggests that individuals act rationally in making decisions by utilizing the information and capabilities they possess.

The Influence of Risk Perception on Stock Investment Decisions

Based on the hypothesis testing results, risk perception was found to have a positive effect on investment decisions. This finding indicates that individuals with a higher propensity for risk-taking, commonly referred to as risk takers, are more likely to make investment decisions involving stocks that offer higher expected returns despite their higher levels of risk. These individuals may be more confident in assuming greater risks because they believe they are capable of managing those risks and achieving superior investment returns. This finding is consistent with the life cycle theory, which suggests that younger individuals tend to exhibit a greater willingness to undertake higher levels of risk. The findings of this study are consistent with those reported by Aren & Zengin (2016), Baghani & Sedaghat (2014), Wulandari & Iramani (2014), and Sindhu and Kumar (2014), all of whom found that risk perception has a significant positive effect on investment decisions.

The Influence of Overconfidence on Stock Investment Decisions

The findings of this study indicate that the inclusion of financial literacy as a moderating variable does not influence the relationship between overconfidence and the investment decisions made by individuals. Financial literacy is unable to moderate this relationship because, as demonstrated in the first hypothesis, overconfidence itself does not have a significant effect on stock investment decisions. This finding may also be explained by the possibility that overconfidence is an inherent personality trait or a specific psychological characteristic that is not entirely determined by an individual's level of financial knowledge.

The result of this research is consistent with prior research of Quddoos et al. (2020) and Novianggie and Asandimitra (2019) that found that financial literacy is unable to moderate the relationship between overconfidence and investment decisions. These results are also consistent with the dual process theory, which proposes that financial literacy primarily influences the **slow-thinking system** (System 2) and is therefore unable to moderate the influence of the **fast-thinking system** (System 1) associated with overconfidence (Kahneman, 2011). Consequently, even individuals with a high level of financial literacy may still exhibit excessive self-confidence and engage in disproportionate risk-taking when making investment decisions, as these decisions may be driven by the fast-thinking system, which is less rational and more susceptible to cognitive biases.

The Influence of Overconfidence on Stock Investment Decisions

Based on the hypothesis testing results, financial literacy was found to moderate the relationship between risk perception and investment decisions. This

finding indicates that financial literacy moderates the relationship by influencing individuals' perceptions of risk and their investment decision-making processes. Individuals with higher levels of financial literacy are likely to possess a better understanding of the various risks associated with investments and are therefore more capable of conducting comprehensive analyses to evaluate potential risks and investment opportunities.

Furthermore, financial literacy enables individuals to manage investment-related risks more effectively through strategies such as portfolio diversification and the appropriate use of financial instruments. As a result, financially literate investors are better equipped to make rational and well-informed investment decisions while appropriately balancing potential risks and expected returns of stock investments.

CONCLUSION

This study examined the effects of overconfidence and risk perception on the stock investment decisions of Generation Z, as well as the moderating role of financial literacy. The findings reveal that overconfidence does not significantly influence stock investment decisions, suggesting that excessive self-confidence alone is insufficient to explain investment choices among Generation Z investors. In contrast, risk perception exerts a significant positive influence on investment decisions, indicating that individuals with a greater willingness to accept investment risk are more likely to invest in stocks.

The study also demonstrates that financial literacy does not moderate the relationship between overconfidence and investment decisions. This finding implies that improving financial knowledge alone may not be sufficient to reduce the influence of psychological traits such as overconfidence, which are likely driven by cognitive biases rather than a lack of financial knowledge. However, financial literacy significantly moderates the relationship between risk perception and investment decisions. Individuals with higher levels of financial literacy are better equipped to evaluate investment risks, resulting in more rational and informed investment decisions.

Overall, these findings contribute to the behavioral finance literature by highlighting that not all behavioral biases influence investment decisions in the same manner. While overconfidence was not found to be a significant predictor of stock investment decisions among Generation Z, risk perception remains an important determinant, and financial literacy plays a crucial role in improving the quality of investment decision-making through its influence on investors' assessment of risk.

Based on the findings of this study, several recommendations can be proposed. First, future research should consider examining additional factors that may influence investment decisions, such as familiarity bias, loss aversion, herding behaviour, anchoring bias, and other behavioural biases, and also extend the scope of research to include a broader range of age groups, occupations, or levels of investment experience. Secondly, financial institutions and universities should promote and support a higher level of financial literacy education among investors to help them make more informed investment decisions and to also explore more effective strategies for mitigating overconfidence in investment decision-making.

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