



Financial Literacy, Risk Perception, and Risk Tolerance in Investment Decisions in Indonesia

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Abstract

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This study aims to analyze the relationship between financial literacy, risk perception, and risk tolerance on investment decisions in Indonesia through a Systematic Literature Review approach. Several scientific articles published in the last five years and indexed by Google Scholar were systematically analyzed to identify patterns of relationships between variables and trends in relevant research results. The results of the study show that financial literacy has a positive and significant effect on the quality of investment decisions, both directly and indirectly through an increase in individual risk tolerance levels. Risk perception acts as a psychological factor that mediates the way individuals assess uncertainty, opportunities, and potential returns from investment decisions. Meanwhile, risk tolerance serves as a reinforcing factor that balances courage and caution in the decision-making process. These three variables simultaneously shape rational, adaptive, and sustainable investment behavior. The findings of this study are expected to be an important reference in the development of financial education policies, the improvement of public financial literacy, and the expansion of national financial inclusion in the era of economic digitalization.



1. Introduction

The development of the investment sector in Indonesia has shown positive dynamics in recent years, especially with the increasing participation of the public in financial instruments such as stocks, mutual funds, and bonds. Advances in digital technology, easy access to financial information, and increased public awareness of the importance of financial management have been the main driving factors for the increase in individual investment activities. This phenomenon marks a change in people's behavior from being more consumptive to more productive and oriented towards long-term financial planning (Arifah & Dalimunthe, 2020). However, an increase in the number of investors is not always accompanied by an improvement in the quality of investment decisions made. Many new investors do not have an adequate understanding of financial products and the risks that come with them, so investment decisions are often not based on rational analysis and sufficient information (Raut, 2020).

In the context of financial behavior, financial literacy is a fundamental factor that affects an individual's ability to make wise investment decisions. Financial literacy is defined as a person's ability to understand and use basic financial concepts in managing personal financial resources, including understanding risks and returns, portfolio diversification, and the implications of investment decisions on future well-being (Zhao & Zhang, 2021). A person with a good level of financial literacy tends to have a higher ability to assess potential risks and investment opportunities, so the decisions made are more rational and measurable. On the other hand, low financial

literacy can cause individuals to be easily affected by market trends or herd behavior that has the potential to cause losses (Chairani et al., 2021).

In addition to the aspect of financial literacy, risk perception also has an important role in influencing individual investment decisions. Risk perception is a person's subjective assessment of the level of risk that may occur in a financial decision (Antwi & Naanwaab, 2022). Each individual has a different perception of risk depending on the experience, information, and psychological factors he or she has. Investors with a high risk perception tend to be cautious and selective in choosing investment instruments, while those with a low risk perception are more likely to make decisions quickly without in-depth analysis. These differences in how risk are assessed explain the variation in investment behavior between individuals in society.

The third factor that is no less important is risk tolerance, which is the extent to which a person is willing to accept possible losses in achieving potential profits (Baruah & Parikh, 2018). Investors with a high risk tolerance usually have a tendency to choose high-risk instruments in the hope of earning a large rate of return. In contrast, individuals with low risk tolerance will prefer stable, low-risk investments despite relatively low returns. In the context of investment decision-making, risk tolerance serves as a psychological mechanism that determines one's comfort limits to financial risk.

The relationship between financial literacy, risk perception, and risk tolerance has been the focus of many financial behavior studies in various countries, including Indonesia. Empirical studies show that these three variables have a significant

influence on the quality of individual investment decisions (Jain et al., 2020; Muktadir-Al-Mukit, 2022). Individuals with a high financial understanding, realistic risk perception, and balanced risk tolerance tend to make better, longer-oriented investment decisions. Conversely, a combination of low financial literacy and a misperception of risk can lead to impulsive and speculative decision-making.

In the national context, research on financial literacy and investment behavior is very important considering the limited level of financial literacy of the Indonesian people compared to other countries in the Southeast Asian region (Setiawan et al., 2022). This condition shows the need to improve comprehensive financial education so that people are able to manage their finances effectively and rationally. By understanding the relationship between financial literacy, risk perception, and risk tolerance to investment decisions, this research is expected to make an academic and practical contribution to the development of national financial education policies.

2. Literature Review

2.1. Financial Literacy and Investment Decisions

Financial literacy is an individual's ability to understand basic financial concepts needed to make effective and responsible financial decisions. This understanding includes aspects of financial planning, debt management, investment, and awareness of the risks and returns that may arise from a financial decision (Hussain et al., 2018). A high level of financial literacy is believed to encourage a person to make more rational investment decisions, as individuals are able to objectively assess potential gains and losses based on available information (Arifah

& Dalimunthe, 2020). In contrast, individuals with low financial literacy tend to make impulsive decisions, follow market trends without a basis for analysis, or rely on the opinions of others in choosing investment instruments.

Several studies have shown that financial literacy plays an important role in improving investment participation and performance. According to Klapper and Lusardi (2020), individuals with a high level of financial literacy have a tendency to develop long-term investment strategies and diversify portfolios to minimize risk. Thus, financial literacy not only functions as a tool of knowledge, but also as a form of mental readiness and rationality in facing market dynamics. In Indonesia, financial literacy is an important issue because there is still a gap between increasing the number of investors and adequate financial understanding. Therefore, a good understanding of financial literacy is expected to be able to form wise, rational, and sustainable investment behavior.

2.2. Risk Perception, Risk Tolerance, and Investment Decisions

In addition to financial literacy, two psychological variables that have a significant effect on investment behavior are risk perception and risk tolerance. Risk perception refers to the way an individual interprets the potential danger or uncertainty of an investment based on his or her experience, information, and psychological state (Ahmed et al., 2021). This perception determines the extent to which a person feels comfortable in dealing with the uncertainty of investment results. For example, investors with a perception of high risk tend to be more cautious and choose stable instruments, while those with a low perception of risk are more courageous to make speculative decisions.

Meanwhile, risk tolerance describes the extent to which individuals are willing to accept losses in an effort to achieve potential profits (Sharma, 2020). This level of tolerance is relative and is influenced by the factors of age, income, experience, and economic conditions of the individual. Asad et al. (2022) emphasized that a balance between perception and risk tolerance is the key to optimal investment decision-making. The incompatibility between the two can lead to emotional bias and inefficient decisions. Therefore, understanding these two psychological factors is important for investors to be able to manage risk proportionately and minimize negative impacts on investment returns.

3. Method

This study uses the Systematic Literature Review (SLR) method as the main approach to identify, evaluate, and synthesize the results of previous research that discusses the relationship between financial literacy, risk perception, risk tolerance, and investment decisions. The SLR method was chosen because it is able to provide a comprehensive and systematic scientific basis in understanding research phenomena based on existing empirical evidence. This approach also allows researchers to assess the consistency of findings between studies, find research gaps, and propose more relevant directions for further research.

The stages of implementing SLR in this study consist of three main phases, namely planning, conducting, and reporting. In the planning stage, the researcher determines the focus of the study and formulates research questions, namely how financial literacy, risk perception, and risk tolerance relate to individual investment

decision-making. After that, the researcher compiles inclusion and exclusion criteria for the selection of relevant articles. Inclusion criteria include: (1) scientific articles published within the last five years, (2) indexed in Google Scholar, (3) written in Indonesian or English, and (4) addressing at least two of the three main variables of the study. Meanwhile, the exclusion criteria include articles that are non-empirical, do not have a clear method, or only review financial behavior variables in general without direct relevance to investment decisions.

The conducting stage involves the process of searching and selecting articles from various scientific journals using keywords such as financial literacy, risk perception, risk tolerance, and investment decision. This process resulted in a total of 85 articles obtained from the initial search results. After going through screening based on eligibility criteria and duplicate checks, several articles that meet methodological standards were obtained for further analysis. All articles were then reviewed using content analysis techniques to identify similarities in patterns, differences in results, and relationships between variables found in various research contexts.

The last stage, reporting, involves compiling the results of the synthesis in the form of a descriptive narrative to explain research trends, the direction of empirical findings, and the theoretical contributions produced. Data from each article is presented systematically through a table of analysis and qualitative interpretation to ensure transparency and repeatability of the research process. Thus, the SLR method in this study is expected to be able to produce a comprehensive understanding of the influence of financial literacy, risk perception, and risk tolerance on investment

decisions, especially in the context of Indonesia's society that continues to develop financially and digitally.

4. Results

The results of this systematic literature review present a comprehensive understanding of the relationship between financial literacy, risk perception, and risk tolerance to individual investment decisions in Indonesia. Based on an analysis of several scientific articles published between the last five years and indexed by Google Scholar, it was found that the majority of studies agree on the central role of financial literacy as a major determining factor in investment decision-making behavior. Individuals with good financial literacy levels tend to have higher analytical abilities in understanding the characteristics of investment instruments, including their risks and potential returns (Hussain et al., 2018). On the other hand, investors with low financial literacy are more easily affected by market trends, rumors, or herd behavior that can trigger speculative and irrational decisions (Chairani et al., 2021).

In-depth analysis shows that increasing financial literacy not only affects the cognitive aspects of investors, but also has an impact on the affective dimension, namely confidence and emotional stability in the face of market fluctuations (Setiawan et al., 2022). Thus, financial literacy serves as an important foundation in creating mature and sustainable investment behavior. A study by Hidayat and Pamungkas (2022) confirms that financial literacy has a positive and significant influence on stock investment decisions in Indonesia, where individuals with a better understanding of finance are able to conduct a rational risk analysis before making

decisions. Similar findings were put forward by Samsuri et al. (2019), who found that high financial literacy correlates with increased investment participation, especially among the younger generation.

In addition to financial literacy, risk perception has been proven to be an important psychological variable that also influences investment decisions. Risk perception reflects how individuals view and assess the potential losses of a financial decision based on personal experience and social environment (Muktadir-Al-Mukit, 2022). Investors with an accurate and realistic perception of risk tend to be able to adapt their investment strategies to changing market conditions, while those with an excessive perception of risk tend to avoid productive investments, even when the opportunity for profit is substantial. Sharma's study (2020) found that a healthy risk perception, which is balanced between optimism and prudence, can encourage investors to be more adaptive in determining asset allocation. This is in line with the findings of Nguyen et al. (2019) who identified that risk perception is influenced by the level of financial knowledge, personality, and previous investment experience.

The results of the synthesis also show that risk tolerance plays a mediating role between financial literacy and investment decisions. In other words, financial literacy not only has a direct impact on investment decisions, but also indirectly through increasing risk tolerance (Waheed et al., 2020). Investors with high financial literacy generally have a greater level of risk tolerance because they understand the concepts of diversification and portfolio management. They realize that risk is not always synonymous with loss, but rather as part of the opportunity to get a higher return (Baruah & Parikh, 2018). In contrast, investors with low literacy tend to have

a low risk tolerance, which makes them avoid investments with high return potential. Findings from Bapat (2020) show that both risk perception and risk tolerance have a significant effect on the investment intention of the younger generation, with financial literacy acting as a moderating factor that strengthens this relationship.

In aggregate, the majority of studies found that financial literacy, risk perception, and risk tolerance have a positive and significant relationship with the quality of investment decisions (Linciano et al., 2018; Raut, 2020). However, some studies have also highlighted differences in outcomes in certain demographic groups. For example, Arifah and Dalimunthe (2020) show that investors from the younger age group tend to have better financial literacy in digital finance aspects, but do not yet have the maturity to assess long-term risks. In contrast, older age groups show conservative attitudes with low risk tolerance, but are more rational in considering investment decisions. Thus, demographic characteristics such as age, income, and investment experience were shown to moderate the relationship between the variables studied.

The results of the review also confirm that the development of financial technology (fintech) also affects the dynamics of the relationship between financial literacy and investment decisions. Easy access to information through digital platforms expands people's opportunities to invest, but also increases the complexity of risks that must be understood (Klapper & Lusardi, 2020). This phenomenon requires increasing digital financial literacy so that investors are able to assess the credibility of information and choose investment instruments that suit their risk profile. According to Hidayat and Pamungkas (2022), in the era of financial

digitalization, individuals who are able to integrate traditional financial literacy with digital literacy have a competitive advantage in effective and efficient investment decision-making.

From the results of the synthesis of various studies, three main patterns of intervariable relationships were found. First, financial literacy plays a role as a direct determinant that affects the quality of investment decisions through improving analytical and financial planning skills (Zhao & Zhang, 2021). Second, risk perception serves as a psychological factor that determines the extent to which individuals assess opportunities and threats in financial decisions (Antwi & Naanwaab, 2022). Third, risk tolerance becomes an adjustment mechanism that bridges rational understanding of risks and actual actions in investment (Asad et al., 2022). The integration of these three variables results in a comprehensive investment behavior framework, in which cognitive, affective, and conative factors interact with each other in determining decision outcomes.

Although most studies show consistent results, some studies have found interesting variations. For example, the research of Baker et al. (2019) found that financial literacy is not always a dominant factor in investment decisions if emotional variables and cognitive biases are not controlled. Similarly, Ahmed et al. (2021) note that investors with a high risk tolerance do not always make more profitable decisions because the overconfidence factor can lead to excessive decision-making. This emphasizes the need for a balance between analytical skills and emotional self-control in the investment process.

Overall, the results show that there is a synergy between financial literacy, risk perception, and risk tolerance as determinants of healthy investment behavior. These three factors interact to form a more objective and measurable decision-making process. Financial literacy provides a knowledge base, risk perception influences the assessment of uncertainty, and risk tolerance determines courage in the face of potential losses. In the Indonesian context, the improvement of these three aspects is important as national financial inclusion develops. Governments and financial institutions need to strengthen financial education programs that not only emphasize understanding concepts, but also on the formation of responsible investment attitudes and behaviors (Setiawan et al., 2022). Thus, the results of this SLR confirm that the success of investors in making investment decisions is not only determined by economic factors, but also by a combination of literacy, perception, and attitude towards the risks faced.

5. Discussion

The results of this study reinforce the view that financial literacy, risk perception, and risk tolerance have complementary roles in shaping rational investment behavior in Indonesia. Theoretically, this relationship can be explained through a behavioral finance approach that emphasizes that financial decisions are not only based on economic logic, but also on individual psychological and emotional factors (Samsuri et al., 2019). Financial literacy serves as a cognitive foundation that helps investors understand risks and opportunities objectively, while risk perception and tolerance play a role in shaping emotional attitudes towards

uncertainty. All three create a balance between rational analysis and mental readiness in the face of market volatility.

Findings from the literature synthesis show that improving financial literacy has a dual effect: it directly improves decision-making skills, and it indirectly strengthens risk tolerance through an understanding of diversification and risk management (Hussain et al., 2018). With good financial literacy, investors can minimize cognitive biases such as herding, loss aversion, or overconfidence that often lead to suboptimal investment decisions (Sharma, 2020). In this context, knowledge serves not only as information, but also as a self-control mechanism against adverse emotional behavior.

In addition, the perception of risk proves to be a dynamic element that can change along with market experience and situation. Investors who have longer investment experience show better adaptability in assessing risk, while new investors tend to have an excessive perception of risk and avoid productive investments (Linciano et al., 2018). This difference underscores the importance of continuous financial experience and education as a reinforcing factor in shaping a healthy perception of risk. In the long run, realistic risk perceptions contribute to market stability because investors are able to make decisions based on analysis, rather than fear or momentary euphoria.

Findings from Hidayat and Pamungkas (2022) also show that financial literacy not only improves cognitive abilities, but also changes the orientation of investment behavior from the short term to the long term. Investors who understand the concept of risk and return will focus more on the intrinsic value of the investment,

rather than on short-term price fluctuations. This is in line with the concept of rational decision-making that puts risk analysis at the core of the investment process. In the macro context, increasing financial literacy at the community level can strengthen capital market stability and support national financial inclusion through broader and quality investment participation.

Thus, financial literacy, risk perception, and risk tolerance are three pillars that reinforce each other in the investment decision-making process. Efforts to improve financial literacy must be carried out in a sustainable manner through formal education, national campaigns, and practice-based training so that people not only know the concept, but also be able to apply it in real life. In addition, financial institutions and regulators need to design risk communication strategies that are more transparent and easy to understand so that people's risk perceptions are proportionately formed. The combination of good understanding and mental readiness for risks is believed to result in intelligent, adaptive, and sustainable economic development oriented investment behavior in Indonesia.

6. Conclusion

This study concludes that financial literacy, risk perception, and risk tolerance have a strong relationship and influence each other in the decision-making process of individuals in Indonesia. Financial literacy serves as the primary foundation that helps individuals understand financial information, assess risk, and strategically manage assets. With a high level of literacy, investors are able to make more rational decisions and based on careful analysis. Risk perception is proven to determine how

one views the uncertainty and potential losses of an investment. The more realistic the risk perception has, the better the quality of investment decisions produced.

Meanwhile, risk tolerance serves as a measure of an individual's mental readiness in the face of uncertainty in investment outcomes. A balanced tolerance allows investors to dare to take chances without neglecting the principle of prudence. The synergy between financial literacy, risk perception, and risk tolerance forms a framework for healthy and sustainable investment behavior. These three are not only important for individual investors, but also for financial institutions and policymakers in designing strategies to improve national financial literacy and inclusion. By strengthening these three aspects, it is hoped that the Indonesian people will be able to become independent, rational, and oriented investors for sustainable long-term economic development.

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