

The Mediating Role of Risk Perception in the Relationship between Risk Propensity and Investment Decisions among Millennials in Indonesia

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ABSTRACT

Objectives: This study aims to explore the relationship between risk propensity, risk perception, and investment decisions among millennials in West Java, Indonesia. The study particularly examines how risk perception mediates the relationship between risk propensity and investment choices.

Methodology: A purposive sampling method was used, with 500 respondents from the millennial generation, aged 24-39 years, who have at least one year of experience in investments. The data was collected via online surveys and analyzed using correlation and mediation analysis with Process v.34 by Andrew F. Hayes.

Findings: The results demonstrate that risk propensity has a direct positive effect on investment decisions. Additionally, risk perception significantly mediates the relationship between risk propensity and investment decisions. Millennials with higher risk propensity tend to make more risk-taking investment decisions, but the level of their risk perception influences the final decision-making process.

Conclusion: This research contributes to a deeper understanding of how risk behaviors, particularly risk propensity and perception, shape investment decisions among millennials. It provides valuable insights for investors and practitioners in the field of digital investment, suggesting that fostering better risk perception could lead to more informed investment decisions.

Keywords: Investment Decision, Millennial Generation, Risk Propensity, Risk Perception.

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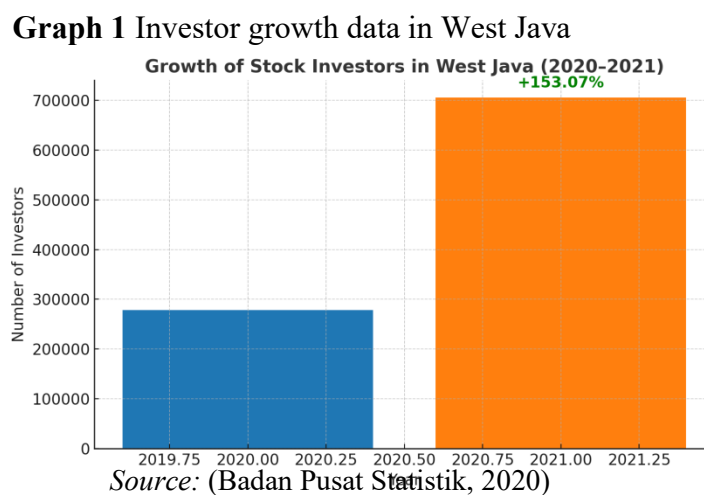
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INTRODUCTION

Pandemic Covid-19 has made people realize the importance of saving some funds. They usually allocate the money to various investment opportunities. This is evident in the quantity of investors in the last several years, amid the rampant pandemic, which increased drastically. According to the data, the majority of the investors are millennials and generation Z aged 18 to 30 years (Zhang et al., 2022). All of these suggest that there has been a growing interest of the younger generation in doing the investment.

West Java is considered to be the most densely populated region in Indonesia. In 2020, the Indonesian Stock Exchange (ISE) reported that the number of investors in West Java reached 278,679 people. In 2021, the number of investors increased from 426,586 people to 705,265 people, which show a growth of 153.07% compared to those of in the previous year. Additionally, Bandung, which is located in the West Java region, has the largest number of stock investors, comprising 135,545 investors. The number places Bandung as the top ranked area among the 27 regions in West Java. Most investors in this region are individuals aged 26 to 30 or known as the millennial generation or Generation Z (Yudanto et al., 2020). The empirical data from the relationship between risk propensity and investment decisions is mediated by risk perception, *particularly among millennials*, generation in West Java, can be identified as follows:



Indonesian Stock Exchange data shows a surge in the number of investors in West Java, from 278,679 in 2020 to 705,265 in 2021 (a 153.07% increase), with Bandung being the largest contributor. This increase is largely driven by millennials actively using digital investment platforms. Their perception of risk and their risk propensity both play a role in their investment choices. When risk perception is low, it serves as a mediating variable to determine whether risk-taking tendencies truly influence investment decisions, investment increases, but when risk perception is high due to market uncertainty, investment decisions tend to decrease.

Based on the survey conducted by the (BPS, 2023), over the last two years millennials or generation Z have shown a strong inclination towards investing in stocks and mutual funds. The financial choices of millennials are closely influenced by the strong connection toward the digital platforms. These digital platforms provide convenient financial services including a brief examination of the investment market situation, and an easy registration and

administration process. The available investment options demonstrate a high level of diversification (Dangol & Manandhar, 2020). Young and inexperienced investors can start investing their funds using digital investment platforms. Undoubtedly, this will serve as a strong incentive for the younger generation to start investing with the resources they have.

When making investment decisions, each individual cannot escape from the element of risk. Therefore, the researchers assume that several factors such as investment decisions can be influenced by risk perception and propensity. Risk propensity in an individual refers to his/her willingness to take risks. Risk propensity can assist investors in choosing strategic investment decisions. It is supported by the findings of the previous studies which showed that the investors need to recognize risk propensity before making investment decisions in order to minimize future risks (Sharma & Lyall, 2021). Meanwhile, risk perception can help investors make better decisions when they face unclear situations (L. Riaz & Imran Hunjra, 2015), (Waheed et al., 2020). Even though previous research has demonstrated research on risk propensity and investment decisions using risk perception as the mediating variable, as well as the impact of risk perception and risk propensity separately on investment decisions are scarce, especially in the case of millennial generation. Therefore, researchers are interested in analyzing further the millennial's investment behavior.

The purpose of this study is to investigate millennial behavior generation in making decisions when investing. First, we determine two factors that influence the risk behavior of the millennial generation. Second, we examine the separate influence of risk perception and risk propensity. Thirdly, we investigate how risk perception acts as a mediator. These research objectives were achieved by collecting the data from the millennials generation who filled out well-organized questionnaires. The second part of the study provides an exposition of the literature review, while the third component explains the research methodology. Examination of data sources is carried out in the fourth section. Discussion and conclusions of the research are presented in the fifth section.

LITERATURE REVIEW

2.1 Behavioral Finance Theory

This research adopts behavioral finance theory. According to (Lintner, 1969), behavioral finance is a discipline that studies how humans make decisions based on attitudes and reactions to the available information by considering the risks inherent in it, so that the level of decision making is optimal. Interpretation of individual investors and the assessment of information are examined in behavioral finance to make risky investment decisions (Shiller, 2003), (Ishfaq & Kashif Khurshid, 2016). Concentration, memory, logic, problem-solving, judgment, and understanding are mental skills determined by behavioral finance. In psychology, cognition is associated with the mind processing, reasoning, and intelligence. Simply put, cognition is associated with higher mental functions like reasoning, emotion, problem-solving, decision-making, and logical ability.

Perception of risk is essential as a psychological mechanism mediating the connection between investment choices and risk-taking tendencies, especially among the younger generation. According (Kaban & Linata, 2023) found that behaviors such as herding and overconfidence can increase risk perception, ultimately influencing investment decisions among Generation Z in Indonesia. This is in line with the findings of (Natahadi et al., 2023), who also confirmed that risk perception is an intervening variable explaining how trust in

financial influencers and financial literacy shape millennials' herding behavior and investment decisions.

This is reinforced by the statement from (Ramadhianto et al., 2025) which shows that even if someone has financial confidence and a high risk-taking tendency, investment decisions still depend heavily on how the individual perceives potential losses. Meanwhile, (Gokhale & Mittal, 2025) use the Stimulus Organism Response (SOR) and Behavioral Finance approaches to explain that risk perception acts as a psychological "organism" that processes external stimuli (such as investor protection and literacy) before producing a response in the form of an investment decision. This strengthens the understanding that risk perception is not only a reflection of market conditions, but also a cognitive and emotional process that bridges an individual's courage to take risks with actual investment actions.

Behavioral finance significantly impacts investor decision making. Therefore, behavioral finance is an indispensable component in this process. The improvement of investment decision making can be achieved through the application of behavioral finance principles. In contrast to logically evaluating the company's profits and losses, many investors base their trading choices based on feelings. Although investors are only human, many economic and financial theories make the assumption that they are logical. In some occasions, their financial choices are based on intuition, while in other instances, they take market sentiment into account. Therefore, understanding the factors that influence investors' decisions to invest in certain initiatives is essential (L. Riaz & Imran Hunjra, 2015).

2.2 Risks to Investment Decisions

Risk perception and risk propensities are believed to be the most significant factors influencing risk-related behaviors. People who have a high risk propensity are more likely to perceive situations as low risk, which makes them more likely to take more chances than people with a low risk propensity. Similarly, investment behavior among investors depends on their risk perceptions. Similar findings are supported by (Silfiani & Dahlan, 2023) who added that financial behavior can be a link between financial factors (such as income and literacy) and investment decisions, because risk perception shapes how a person interprets potential gains and losses in the context of personal finance.

Particularly in the digital age and among younger generations, risk perception acts as a psychological mechanism that connects behavioral and personality factors that influence individual investment choices. Risk perception acts as a "cognitive filter" that translates risk-taking tendencies into actual investment actions (Gokhale & Mittal, 2025). This emphasizes that an individual's orientation can have a high risk propensity. If risk perception increases due to negative information or market uncertainty, investment decisions can be delayed or shifted to lower-risk instruments. Conversely, low risk perception, supported by financial literacy and high self-efficacy, which motivates people to invest more actively.

A number of variables, including an investor's personality, degree of confidence, and rate of return, influence how they perceive and respond to the risks. The more returns he needs, the more systematic risk he has to take more. In other words, there will be a positive relationship between risk propensity and the decision maker's risk perception (L. Riaz & Imran Hunjra, 2015). As previous research has shown, risk propensity has a positive influence on investment decisions (Mulyani et al., 2021). The researchers conclude that millennials' risk propensity has a favorable impact on their investment choices. Therefore, the first hypothesis is formulated as follows. The formulation of the hypothesis that can be interpreted regarding risk tendencies is as follows H1: Investment decisions are positively impacted by risk

propensity. Thus, risk perception becomes an important psychological variable that not only reflects market conditions but also indicates how investors assess, manage, and respond to risk in the process of choosing investments. According to (L. Riaz & Imran Hunjra, 2015), risk propensity and risk perception are interconnected. They are related through a number of ways, including the investors' attention to specific information and their capacity to respond to risky characteristics which can later influence evaluations of risky situations. This approach is consistent with the previous research by (Jackson & Dutton, 1988), (Staw et al., 1981). To put it another way, risk propensity influences decision-making both directly and indirectly. Furthermore, risk propensity influences risk perception, which in turn influences risky decision making. The researchers' findings indicated that the second hypothesis, H2: Risk Propensity has a positive effect on Risk Perception, was well-formulated. It can be concluded that risk propensity has a positive influence on investment decisions among the millennial generation. Thus, the second hypothesis is formulated as follows.

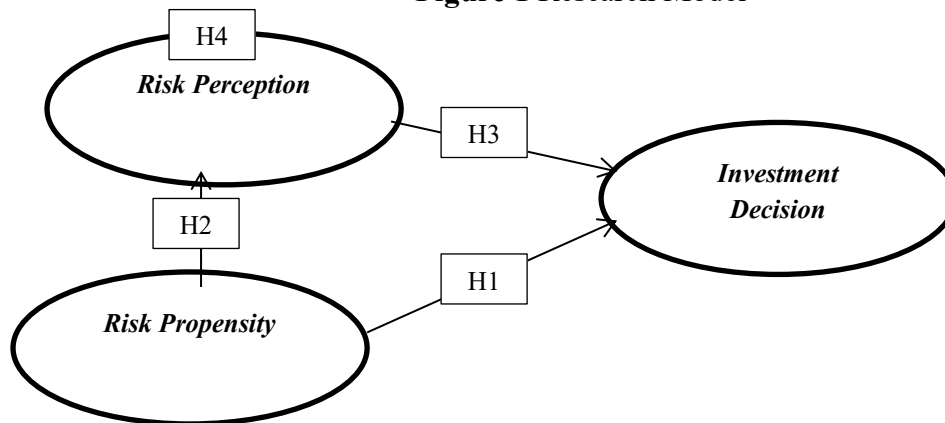
A person's perception determines his or her readiness to face risks, as this readiness is closely related to potential losses or profits in the future. Consequently, inaccurate information can have a substantial influence on how the investment turns out because the person will use the information to make decisions. To put it another way, investors' perceptions of risk are very important when choosing investment strategies with unpredictable results. Even though there are a lot of variables that could affect investors' choices, risk perception is crucial. This is because perception involves evaluating the level of risks, which generally requires understanding of the situation and implies that the objective reality has an explanation (F. Riaz & Kashif, 2023).

According to the research, natural risk perception, as opposed to technical risk metrics like differentiation, beta, or standard deviation, is what causes risk perception. Human behavior depends heavily on risk perception, particularly when making decisions in ambiguous circumstances. A risky scenario occurs when people suffer losses due to poor decisions. This is particularly true when the losses affect their financial status. Consequently, risk perception is an assessment of risk situations that is strongly influenced by individual features and psychological states (Ramu, 2021). The results of the confirmation of this theory identified that the formulation of the 3rd hypothesis, namely, H3: Investment decisions are positively impacted by risk perception. Thus, the researchers formulate the third hypothesis as follows.

According to (Horbatiuk et al., 2021), there is no clear correlation between the factors that drive individuals to take action and their actual behavior. Rather, the intermediaries that may transmit influence during the decision-making process are risk perception and risk propensity. Their study's results lend credence to the notion that people's behavior in risky circumstances is influenced by their risk perception and propensity. The mediating function of risk perception and risk propensity in financial product investments has been examined in earlier research. The findings indicate that there is no mediating influence between risk propensity and investment experience.

Although risk perception also plays a partial mediating role in the investor's process of determining the expected return level by considering the risk propensity, the risk perception acts as a complete mediator when investors shape their portfolios according to their unique risk propensity (Chang et al., 2021). Based on the findings of this theory, it was identified that the formulation of the 4th hypothesis is, H4: The relationship between risk propensity and investment decision is mediated by risk perception. Therefore, the researchers formulate the fourth hypothesis as follows.

Figure 1 Research Model



The figure illustrates the research model, interprets risk and investment decisions. The direct relationship (H1) indicates that people who are inclined to take risks often make bolder investment decisions without being overly influenced by external factors. Meanwhile, the indirect relationship (H2 and H3) explains the mediation mechanism through risk perception: someone with a high risk propensity will be more likely to assess investment risks in a certain way (H2), and this perception then influences their final investment decision (H3). Thus, relationship between risk propensity and investment decisions is mediated by risk perception, and hypothesis H4 examines the overall impact of this relationship. This model demonstrates how investment choices are impacted by more than just an individual's risk-taking nature, but also by how the individual interprets and assesses the risks they face.

METHOD

The objects of this research are risk propensity, investment choices and risk perception. This study focuses on the millennial group, especially those engaged in individual investments. The research targets investors who live in West Java and meet the following criteria: being millennials (individuals aged 24 to 39 years), and having a minimum of one year's experience making investments. Purposive sampling is an approach to sample selection through which the members of the population are selected based on certain criteria or considerations. Purposive sampling was employed in the sampling procedure, and the Slovin formula was used to determine the sample, identified as follows:

$$n = N / (1 + (N \times e))$$

$$n = 12.500.000 / (1 + 12.500.000 (0.5\%))$$

$$n = 12.500.000 / 1 + 62.500$$

$$n = 12.500.000 / 62.501$$

$$n = 199 \text{ dibulatkan } 200$$

Based on Slovin's measurements, a starting point for this study is 200 respondents. However, this study's (Vulkan, 2020) sample adjustment refers to the statement that a suitable sample size in research is between 30 and 500, which is sufficient for most researchers. Therefore, the sample size used in this study was 500 individuals. The data collection was carried out for three months from July to September 2023 and was done by administering an online questionnaire using Google Form. This research utilized a 7-point likert scale for measurement. Risk Propensity measurement refers to a study by (Creswell, 2016) with five

dimensions, namely return expectation, time horizon, loss aversion, fund infusion, and diversification/investment style.

Risk Perception is measured using three dimensions adopted from (Nur Aini & Lutfi, 2019). Meanwhile, investment decisions have been adapted from the study by (Rahman, 2015) using questions related to investment objectives, attitude towards loss, self-confidence during investment decisions, risk tolerance, and long investment holding periods. The collected data were then processed by conducting correlation analysis and mediation analysis using process v.34 by Andrew F. Hayes. Testing of the data was done using the SPSS Version 26 program.

RESULTS AND DISCUSSION

Results

This research employed descriptive statistics, correlation analysis, and multiple regression. The demographic profile of the respondents was described using descriptive statistics. To verify the validity of the collected sample, the Cronbach's alpha test was used to evaluate its reliability. This element determines the accuracy of the data collected. Multiple regression and correlation analysis were employed to carry out additional research and determine the type of relationship between various variables.

Based on the overall data, the sample consists of more male respondents than the females. The male gender ratio is 57% or 287 people, while the female ratio is 43% or 213 people. Most of the respondents were dominated by those aged under 25 years old, comprising 45% or 225 people. Regarding the respondents' education level, the majority holds bachelor's degrees, accounting for 39% or 195 people. In terms of occupation, respondents were mostly dominated by private employees, comprising 35% or 175 people. Additionally, Most of the people who responded earn between of 6,100,000–10,000,000, with a ratio of 47% or 233 people.

The degree or the direction of the relationship between the data can be determined using Pearson analysis of correlation. The findings of the investigation into the potential underlying relationship between the variables are displayed in table 1. Correlation is a statistical measure that quantifies the extent to which two or more variables exhibit a consistent pattern of variation. Correlation analysis was carried out to ensure there was a relationship between variables. Our analysis indicates a robust positive correlation between investment decisions, risk perception, and risk propensity.

Table 1 Correlation Analysis

Correlations				
		Risk Propensity	Risk Perception	Investment Decision
Risk Propensity	Pearson Correlation	1	.846**	.796**
	Sig. (2-tailed)		0	0
	N	500	500	500
Risk Perception	Pearson Correlation	.846**	1	.859**
	Sig. (2-tailed)	0		0
	N	500	500	500
Investment	Pearson	.796**	.859**	1

Decision	Correlation		
	Sig. (2-tailed)	0	0
N		500	500

** Correlation is significant at the 0.01 level (2-tailed).

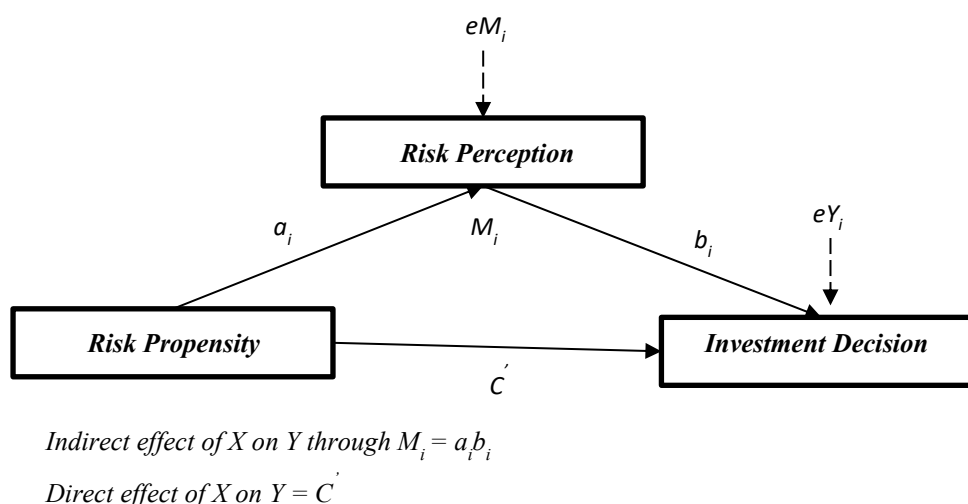
Source: Results of IBM Spss 26 data processing, 2025

Table 1 demonstrates that the relationship between risk propensity and investment decision is 0.796 with a significance level of 0.000 or less than 0.05 for error tolerance. This means that in this study Investment decisions and risk propensity are significantly correlated. Furthermore, the information in Table 1 shows that there is a significant correlation between risk propensity and risk perception, with a correlation value of 0.846 at a significance level of 0.000. At a significance level of 0.000, the correlation between risk perception and investment decision is 0.859. To put it another way, it can be said that perceptions of risk and investment choices are significantly correlated.

To gain a clearer understanding on the degree of the connection between each variable, the correlation values of 0.796, 0.846 and 0.859 can be compared with the correlation coefficient interpretation guide. The results indicate that the correlation coefficient values for the both variables fall within the interval of 0.600 – 0.799, showing that there is a substantial correlation between the variables. The values of the positive correlation imply that the degree of investment decision-making increases with the degree of risk propensity. Furthermore, risk perception rises in tandem with risk propensity. The degree of investment decision-making also increases with the degree of risk perception.

Furthermore, the study utilized mediation analysis. This statistical technique was performed to assess the research findings and investigate the idea that the A consistent independent variable is impacted by the causal dependent variable. To evaluate and confirm the assumptions about unexpected effects of the hypothesis, this study employed basic mediation analysis. Risk propensity is the independent variable, risk perception is the mediating variable, and the dependent variable is investment decision. Using Model 4 in Process Macro by Hayes (2018), the direct and indirect effects of this direct mediation were determined. Therefore, the following is how the mediation model was carried out in this study:

Figure 2 Process Model 4 Mediating



The equations for this model are as follows:

$$M = i_M + aX + e_M \quad (1)$$

$$Y = i_Y + c'X + bM + e_Y \quad (2)$$

$$C' = [\bar{Y} / (X, M = m)] - [\bar{Y} / (X - 1, M = m)] \quad (3)$$

Table 2 Descriptive Statistics for Model Paths a

Model									
	Coefficient	se	t	p	LLCI	ULCI	R	RA	F
Constant	6.1930	0.8485	7.2989	0.000	4.5260	7.8601	0.8457	0.7152	1250.8566
Risk Propensity	0.3599	0.0102	35.3675	0.000	0.3399	0.3799			

Source: Results of IBM Spss 26 data processing, 2025

The statistical test results in Table 2 show the influence of the connection between risk perception (M) and risk propensity (X), which is represented as path an in Figure 2. Simple mediation analysis was tested using ordinary least squares path analysis. According to the research, risk perception can be significantly predicted by risk propensity. According to respondents, risk propensity is a significant predictor of risk perception ($a_i = 0.3699$, $p < 0.001$), as shown in Table 2. As a result, it is possible to accept the second hypothesis.

Table 3 Descriptive Statistics for Model Paths b

Model									
	Coefficient	se	t	p	LLCI	ULCI	R	RA	F
Constant	3.8260	0.6823	5.6072	0.000	2.4853	5.1666	0.8687	0.7546	764.0192
Risk Propensity	0.0856	0.0146	5.8747	0.000	0.0570	0.1143			
Risk Perception	0.5362	0.0343	15.6543	0.000	0.4689	0.6035			

Source: Results of IBM Spss 26 data processing, 2025

As shown in Figure 2 as path b, the statistical test results in Table 3 show a relationship between risk perception (M) and investment decision (Y). Simple mediation analysis was tested using ordinary least squares path analysis. The findings show that perceptions of risk significantly influence investment choices. As can be observed in Table 3, participants indicated that their assessment of risk served as a basis for forecasting investment choices ($a_i = 0.5362$, $p < 0.001$). Therefore, it can be said that the third hypothesis is acceptable.

Table 4 Descriptive Statistics for Path Model C

Model									
	Effect	se	t	p	BootLLCI	BootULCI	R	RA	F
Total Effect	0.2786	0.0095	29.3431	0.000	0.2599	0.2972	0.796	0.6336	861.0182
Direct Effect	0.856	0.146	5.8747	0.000	0.0570	0.1143			
Indirect Effect	0.1930			0.0226	0.1493	0.2370			
Completely Effect	0.5513			0.600	0.4333	0.6666			

Source: Results of IBM Spss 26 data processing, 2025

As can be seen in Figure 2, Table 4 illustrates how risk propensity (X) directly influences investment decisions (Y); this relationship is represented by path C'. As seen in Figure 2 as $M_i = a_{ibi}$, the results also show that risk propensity (X) indirectly influences investment decisions (Y) through risk perception (M). The findings demonstrate that, with a score of 0.2786 and $p < 0.0001$, X's overall impact on Y is significant. With $p < 0.0001$, it is also demonstrated that risk propensity has a significant direct impact on investment decisions. Thus, it is possible to accept the first hypothesis. Additionally, because the impact values do not fall within zero (between 0.5360 and 0.8234), the bootstrap confidence interval for the indirect influence of CSR Perception and Purchase Intention through Country of Origin Image is significant.

BootLLCI (lower level for CI) = 0.1493 and BootULCI (upper level for CI) = 0.2370 are the bootstrap results' confidence intervals (CIs). Given that zero is outside of the 95% CI range, the results suggest that there is an indirect effect—that is, that risk perception mediates the relationship between risk propensity and investment choices. Therefore, it is possible to accept the fourth hypothesis.

Discussion

The more experience the millennials has on investing, the better their decision making will be. This is because someone who is more experienced in investing will find it easier to recognize the potential risks, and of course will be more cautious in making investment decision in the future. In addition, the research results also show that risk perception has an influence in mediating the relationship between risk propensity and decision making (Natahadi et al., 2023). Therefore, it can be interpreted that the risk propensity of the millennials in West Java do not directly explain or influence investment choices. Rather, perception of risk contributes to influencing it. The risk tendencies of the millennials may change if they have different risk perceptions and this will then have a different impact when making decisions. Therefore, it can be concluded that risk perception bridges the relationship between risk tendencies and investment decisions among the millennials in West Java (Hayes, 2017).

Therefore, the millennial generation needs to delve more into the investment subject, especially digital investment. It is expected that practitioners and the government can encourage the general public, especially the millennial generation, to participate in investment activities as an indirect effort to promote sustainable economic development, thus increasing the level of community welfare. Investors focus on recent "high" stock prices and perceive price declines as an opportunity to purchase shares at a discount (Ogunro et al., 2023). The perception that a chosen investment will yield good returns is common among individuals. High self-confidence tends to be less concerned about risk, but is more inclined to invest in riskier businesses and is more willing to take chances.

CONCLUSION

In light of the findings, it can be said that risk propensity influences the Risk Perception among the millennials in West Java. It can be inferred that the millennial generation still has expectations of investment returns with a high perception of risk. They are willing to invest with significant risks because their expectations of high returns are also high. Apart from that, risk propensity among millennials in West Java influences decision making. This means that the millennials in West Java, when making investments, tend to rely on their willingness to take risks based on their experiences in the past investments. Moreover, referring to the results, the study's conclusion is that a number of variables, including risk propensity and risk perception, have been shown to have an impact on the investment choices made by West Java's millennial population. This might be the result of insufficient investment experience and knowledge.

This is based on the consumptive character of today's youth, especially supported by the sophistication of current technology which may either give a negative influence on the lifestyle, or serve as an easily accepted platform to encourage the Indonesian millennial generation to engage in investment. The findings also contribute to the existing literatures and can be used as a reference for academics in conducting research studies. The information in this study also may serve as a basis for formulating frameworks for other researchers by adding other variables that might influence investment decisions. Future researchers can also carry out a more in-dept study by comparing the behavior of several different generations in investment or studying different regions because each region has different customs and habits which may influence the behavior of each individual.

This research also has limitations such as the difficulty of reaching the millennial generation in Indonesia as a whole. Therefore, the researchers only focus on the West Java region. Further research is recommended to examine and compare the millennials in other regions who may have different backgrounds and cultures.

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