



The Influence of Heuristic Biases and Risk Propensity on Investment Decisions of the Millennial Generation in Indonesia

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Abstract

The digital trend during Covid-19 has influenced millennials to invest. Therefore, investors in Bandung have been dominated by millennials. However, researchers believe that millennials are vulnerable in terms of financial prospects. This is because they are easily influenced by biased behavior in investing. In addition, everyone is considered to have inherent psychological biases that prevent them from making rational judgments and risk perceptions that can impact the investment decision-making process. The purpose of this study is to determine the influence of heuristic biases and risk perception on the investment decisions of millennials in Indonesia. The data in this study were analyzed using the Pearson correlation statistical method and linear regression analysis. The results of this study indicate that heuristic biases and risk perception influence the investment decisions of millennials. This study contributes to the existing literature and provides practical implications for investors and the government.

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1. INTRODUCTION



The Covid-19 pandemic phenomenon has had an impact on investments worldwide. Globally, investment has experienced a sharp decline in almost all countries. The 2021 World Investment Report stated that foreign direct investment (FDI) in 2020 was at its lowest level since 2005 and nearly 20% lower than the trough in 2009 during the global financial crisis. (UNCTAD, 2021). Furthermore, the Covid-19 pandemic has also impacted the stock market. Many analysts and researchers attribute the decline in global financial markets to the Covid-19 pandemic, leading to a volatile and negative aggregate market reaction. As noted in a study (Halder & Sethi, 2021), found that stock market returns for most countries experienced low to negative returns. Even since the onset of Covid-19, higher volatility has been observed, and then in later phases of Covid-19, returns increased. However, volatility remains high. This is believed to be due to the implementation of social restrictions or lockdowns in most countries.

Slightly different from other countries, the condition of the capital market in Indonesia is experiencing growth in terms of the number of investors. In fact, the number of capital market investors in Indonesia is said to have increased drastically, as the adaptation to new

habits of working and earning income from home through digital devices has driven a surge in the number of capital market investors (bandung.kompas.com, 2022) . This is supported by data from the Financial Services Authority (OJK), which recorded a total of 7.5 million capital market investors throughout 2021. This realization grew 93 percent compared to the previous year's 3.9 million investors. Furthermore, data shows that the growth in the number of investors has been dominated by millennials. As many as 80 percent of investors in 2021 were millennials, comprising 60.02 percent of investors under 30 and 21.46 percent of investors aged 31 to 40 (www.republika.co.id). This is believed to be because stock transactions can be conducted online, through an online trading system, which can be done from home (investing from home). Furthermore, the cessation of most real investment during the Covid-19 pandemic has led many investors to shift their funds to the capital market (www.jabarprov.go.id).

In Indonesia, West Java province is the most populous province in the country. According to data from the Indonesia Stock Exchange (IDX), the number of investors in West Java reached 278,679 in 2020, and this number increased to 426,586 in 2021. to 705,265 people or 153.07 % of the total number of investors in 2020. Investors in West Java are also dominated by the millennial generation or Gen Z, namely residents aged 26 to 30 years. Of the 27 regions in West Java, the city of Bandung is ranked first as the region with the most stock investors, namely 135,545 investors. (bandung.kompas.com, 2022). This phenomenon has also occurred in America. Charles Schwab (2021) stated that a new generation of investors has emerged amid the global pandemic, which has resulted in economic uncertainty and market volatility. The arrival of these new investors has been dominated by millennials, accounting for 51% of all new investors. This growth in the number of new investors is believed to be due to lower trading costs, new products and services aimed at greater convenience and accessibility, and investment opportunities presented by market volatility.

The digital trend and openness of information in today's technological era have made it easier for millennials to access a variety of information about stocks and investment apps. However, millennials are often considered unable to invest due to their ongoing payments or debts for consumer goods (Widjaja & Pertiwi, 2021). Furthermore, millennials are currently in a fragile financial position. Several previous studies have shown that millennials also have money management issues. Millennials will not only face the complexity of digital financial goods and services but also increased financial risks in the future if they lack financial literacy or digital financial knowledge to support their financial attitudes and behaviors. (Normawati et al., 2021). The study revealed that millennials are vulnerable to framing, mental accounting, and socially responsible investment biases. This means that millennials are more susceptible to biased investment behavior (Khan, 2021).

According to Bogunjoko (2021) behavioral factors have a significant impact on investor decisions, especially among millennial investors in Nigeria. Furthermore, observations indicate that overconfidence (one of the factors under heuristic c) is a factor underlying the high prevalence of other behavioral factors among millennial investors. Therefore, mastering financial management skills is crucial, especially for millennials. This is because good financial management skills can balance spending and prevent financial difficulties. (Karmila et al., 2022). Behavioral finance , according to (Shefrin, 2001) is the study of the impact of psychology on financial markets and decision-making. Psychology is concerned with behavioral processes and how they influence human activity . Behavioral finance deals with complex decision-making activities. The process of selecting a particular alternative from among various options is known as decision-making. This activity occurs after a thorough examination of all options. Therefore, behavioral finance has become a very interesting research area, especially among millennials.

According to Elhussein and Abdelgadir (2020), their research proves that regardless of the level of stock market development, behavioral biases play a significant role in individual investment decision-making. The study also revealed that investors, whether in developed, emerging, or developing countries, are susceptible to psychological biases when making

decisions. Previous research on behavioral biases in developed countries, conducted in the Egyptian stock market, showed that several behavioral factors, such as investor sentiment, overreaction and underreaction, overconfidence, and herd behavior, influence investment decisions (Metawa et al., 2019). Other research on young people in developed countries, such as Bristol, UK, and Istanbul, shows that each country has different behavioral biases, depending on their culture. These behavioral biases in the younger generation have been shown to lead to many irrational financial decisions (Akin, 2022).

Based on several previous studies on behavioral biases in investment decisions in various countries, it can be concluded that despite using different measurements of behavioral bias components, the two variables are interrelated and influence each other. (Elhussien & Abdelgadir, 2020) state that behavioral biases can have different impacts on individuals in different countries. The existence of cultural differences can result in differences in the behavior adopted. Furthermore, differences were also found in the professionalism of investment management between developed and developing countries. Therefore, although behavioral biases influence investment decisions in every country, the impact in developing countries is more observable. Based on this explanation, researchers are interested in further examining behavioral biases.

Investors face the pressures of time risk, uncertainty, and the complexity of the financial environment when making decisions. Under these conditions, most people rely on heuristics, simple techniques for making quick economic judgments. Heuristics, on the other hand, can lead to prejudice, suboptimal judgments, or biased decisions. Cognitive biases lead to biased decisions, even affecting experienced investors (Omoruyi & James Ilaboya, 2019). In theory, heuristics are used by decision-makers to reduce the risk of loss in uncertain situations. Heuristics are rules of thumb used by decision-makers in complex and uncertain situations to make decisions more quickly by simplifying the process of calculating probabilities and forecasting values. When contrasted with rationally evaluating available information, heuristics enable humans to make decisions more quickly.

Everyone has inherent psychological biases that hinder them from making rational judgments and impact their investment decision-making process. Irrational decision-making and poor investment performance are largely attributable to these biases. Previous research has shown that some of the causes of behavioral changes in investors that deviate from rational decision-making have been answered and explained by cognitive heuristics and biases. Studies have found a significant relationship between heuristics and risky investment decisions (Ishfaq & Kashif Khurshid, 2016). This is in line with research conducted by (Gitau et al., 2019) which shows that real estate investors in Embu County, Kenya sometimes do not make investment decisions rationally but are influenced by heuristic biases.

Other factors that can influence investment decisions are risk propensity and risk perception (Sitkin & Pablo, 1992), risk perception simultaneously influences behavior, expected returns, and asset distribution. From a behavioral or behaviorally, there is one main indicator of risk, namely risk perception. Risk perception is very important in human behavior, especially when making decisions in unclear situations. In their research, Waheed et al. (2020) found that risk perception correlates with investment decision-making, with better risk perception leading to better investment decisions. They even stated that risk perception is a significant factor that can influence all investment decisions.

This research is expected to add to the research that has been conducted recently. First, this research is expected to contribute to existing research on investment decisions among the millennial generation, especially in developing countries. Second, this research is expected to contribute to the literature on financial behavior by emphasizing the influence of heuristic biases and risk propensity on investment decisions. Third, it fills the literature gap regarding investment decisions among millennials in Indonesia. Furthermore, this research is also expected to provide practical value, especially for millennials, in making investment decisions. This research is also expected to provide practical value for the government to be able to support the millennial generation in Indonesia in investing

through various programs that can encourage increased socialization and education related to investment.

2. METHODS

The research objects of this study are heuristic biases, risk propensity, and Investment decisions. The subjects of this study were millennials who act as individual investors. The target of this study was investors in West Java with the following criteria: millennials, namely respondents aged 24 to 39 years and having at least one year of investment experience. The number of samples used was 500 people taken using purposive sampling or a sampling technique based on certain criteria or considerations from members of the population.

Data collection was conducted through an online questionnaire using Google Forms and was conducted for 3 months starting from January to April 2023. A 7-point Likert scale was used as a measurement in this study. Heuristic biases are measured using five dimensions adapted from Atif Sattar et al. (2020), including the gambler's fallacy, anchoring, availability, representativeness, and overconfidence. Risk propensity is measured using a study by Saivasan and Lokhande (2022) with five dimensions: return expectation, diversification/investment style, fund infusion, time horizon, and loss aversion. Investment decisions are adapted from a study by Rahman and Gan (2020). using questions related to investment objectives, attitudes toward loss, self-confidence during investment decisions, risk tolerance, and long investment holding periods . The collected data was then processed using Pearson correlation statistical methods and simple linear regression analysis. Hypothesis testing was conducted using SPSS Version 26 software. The relationship between each variable is built into the research model as in Figure 1.

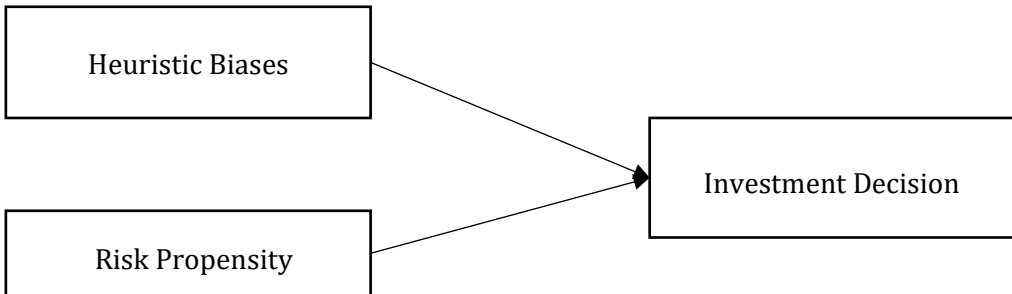


Figure 1. Research Model
Source: Development by Researcher (2025)

3. RESULT AND DISCUSSION

3.1. Results

Based on the results of this study obtained through an online survey for two months, namely January to April 2023. A sample of 500 valid respondents was collected. The final sample had a male gender ratio of 57% or 287 people, and the remaining 43% or 213 women. Most of the respondents were dominated by the age of under 25 years old, namely 45% or 225 people. Based on education, respondents with a bachelor's degree were dominated by 39% or 195 people. Meanwhile, based on the type of work, the respondents were dominated by private sector employees, namely 35% or 175 people. Besides that, the majority of respondents earn 6,100,000–10,000,000 per month with a ratio of 47% or 233 people.

Pearson's correlation coefficient is a statistical measure used to assess the strength and direction of a linear relationship between two variables. Correlation is a statistical measure that quantifies the extent to which two or more variables exhibit consistent patterns of variation. Correlation analysis is carried out to ensure the existence of a relationship between variables. The numerical value of this variable is limited between zero and one. A positive correlation coefficient indicates a positive relationship between the variables, indicating that as one variable increases, the other tends to increase. Conversely, a negative correlation coefficient indicates a negative relationship, implying that as one variable increases, the other tends to decrease.

Table 1 Correlation Test Results

		Correlations		
		HB	RP	ID
HB	Pearson Correlation	1	.902**	.754**
	Sig. (2-tailed)		.000	.000
	N	500	500	500
RP	Pearson Correlation	.902**	1	.796**
	Sig. (2-tailed)	.000		.000
	N	500	500	500
ID	Pearson Correlation	.754**	.796**	1
	Sig. (2-tailed)	.000	.000	
	N	500	500	500

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

Source: Data Processed (2025)

Based on the data in Table 1, the coefficient between heuristic biases and investment decisions is 0.754, with a significance level of 0.000, or less than 0.05 for error tolerance. This means that in this study, there is a significant relationship between heuristic biases and investment decisions. In addition, the data in table 1 also shows that the relationship between risk propensity with investment decisions having a correlation value of 0.796 with a significance level of 0.000, which means there is a significant influence between risk propensity with investment decisions.

To see more clearly how close the relationship is between each variable, the correlation values of 0.754 and 0.796 can be compared with the correlation coefficient interpretation guidelines. As a result, the correlation coefficient value for both variables is in the interval 0.600 – 0.799 which indicates a strong correlation with investment decisions. A positive correlation value indicates that the higher the heuristic biases and risk propensity, the higher the investment decision level, and vice versa.

Next, a simple regression analysis was conducted with the aim of finding out how the dependent variable (Y) investment decision can be predicted through the independent variable (X) heuristic biases or predictors individually. This analysis technique can also be used to determine whether the independent variable increases or decreases, or whether the dependent variable can improve by increasing the independent variable, or vice versa. The results of the simple regression coefficients can be seen in the following table 2.

Based on the data in Table 2, it can be seen that the constant value of 10,692 indicates that if the value of the heuristic biases variable is constant, then the investment decision is worth 10,692. The heuristic biases regression coefficient is 0.276, which means that for every one unit increase in heuristic biases, there will be an increase in the investment decision by 0.276. To calculate how much influence heuristic behavior has on investment decisions, it can be calculated using the determinant coefficient formula. Based on the calculation of the determinant coefficient formula, it can be seen that heuristic biases have a positive effect on investment decisions in the millennial generation in West Java by 56.8%, while the remaining 43.2% is influenced by other factors or variables not studied. Other factors that may influence investment decisions are tolerance and/or risk perception in investors. In addition, it is known that the t-test of heuristic biases is 25.635 while the t-

table with a significance level of 5% is 10.692. Thus, it can be said that H0 is rejected and H1 is accepted, which means the regression coefficient is significant. So there is an influence between heuristic biases on investment decisions.

Table 2 Results of Simple Regression Test of the Relationship Between Heuristic Biases and Investment Decisions

Coefficients^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	10,692	.768		13,919
	HB	.276	.011	.754	25,635

a. Dependent Variable: ID

Source: Data Processed (2025)

The following are the results of a simple regression analysis with the aim of finding out how the dependent variable (Y) investment decision can be predicted through the independent variable (X) risk propensity or predictor individually. This analysis technique can also be used to decide whether the independent variable increases or decreases, or to improve the condition of the dependent variable by increasing the independent variable or vice versa.

Table 3 Results of Simple Regression Test of the Relationship Between Risk Propensity and Investment Decisions

Coefficients^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	7,146	.792		9,027
	RP	.279	.009	.796	29,343

a. Dependent Variable: ID

Source: Data Processed (2025)

Based on the data in table 3, it can be seen that the constant value of 7.146 indicates that if the value of the risk propensity variable is constant, then the investment decision is worth 7.146. The risk propensity regression coefficient is 0.796, which means that every increase of one unit of risk propensity will increase the investment decision by 0.796. To calculate how much influence risk propensity has on investment decisions, it can be calculated using the determinant coefficient formula. Based on the calculation of the determinant coefficient formula, it can be seen that risk propensity has a positive effect on investment decisions in the millennial generation in West Java by 63.4%, while the remaining 36.6% is influenced by other factors or variables not studied. Other factors that may influence investment decisions are tolerance and/or risk perception in investors. In addition, it is known that the calculated t of risk propensity is 29.343 while the t table with a significance level of 5% is 7.146. Thus, it can be said that H0 is rejected and H1 is accepted, meaning the regression coefficient is significant. Therefore, there is an influence between risk propensity and investment decisions.

3.2. Discussion

The influence of heuristic biases and risk perceptions is strongly relevant in the investment decision-making process. Decision-making in the investment world is a complex and uncertain process. In such situations, investors often rely on simple cognitive mechanisms known as heuristic biases, influenced by their perception of potential risks. Heuristic biases are mental strategies that enable individuals to make decisions quickly and efficiently. However, this ease often comes at the cost of misjudgments or systematic biases

that lead to less rational decisions. In contrast, risk perception emphasizes an individual's subjective interpretation of the potential losses or negative outcomes arising from an investment decision. These two aspects interact with each other and make a major contribution to investor behavior in various situations. Risk perception emphasizes an individual's subjective interpretation of the potential loss or negative outcome resulting from an investment decision. These two aspects interact and significantly influence investor behavior across various situations. According to Kumar et al. (2024), risk perception is not merely a mathematical calculation or rational analysis, but also encompasses an individual's beliefs, values, and social norms. Each investor may interpret the same level of risk differently, depending on their experience, knowledge, and background.

This classification demonstrates the reliability of the test results, where the heuristic bias variable falls into the significant category. These findings reinforce the argument that cognitive bias is not merely a psychological phenomenon but a real factor statistically proven to influence risk perception (Qimyatussa'adah & Kumalawati, 2018). The significance of these results also has important implications, both theoretically and practically. This, in line with findings during the COVID-19 pandemic, provides a clear picture of how heuristic bias and risk perception work together. During this crisis, many investors exhibited fear and paranoia about sharp market fluctuations. This situation encourages them to rely more heavily on heuristics as shortcuts in decision-making. For example, the herding heuristic, or the tendency to follow the crowd, is becoming increasingly dominant, as investors prefer to act in line with the majority to reduce uncertainty. Similarly, the anchoring heuristic, where investors remain fixated on initial information despite drastic market changes, is becoming more prevalent (Botzen et al., 2022). Research (Yadav & Chaudhary, 2022) reinforces these findings by highlighting that risk perception serves as a mediator in the relationship between bias heuristics and investment decisions. They found that individuals with higher risk awareness did not necessarily avoid heuristics, but were more selective in their use.

Broader social and environmental aspects were also raised by Mangoting (2020) regarding the use of e-filing among taxpayers, finding that the perception of functional benefits can act as a mediator in decision-making. Although the research focus is not directly on investment, the concept remains relevant. This suggests that an individual's perception of certain benefits or risks can shape their propensity to use heuristics. Thus, the influence of heuristic biases and risk perception on investment decision-making is complex and multidimensional. Individual, psychological, and social factors play a role in shaping how investors respond to market uncertainty. A deeper understanding of this relationship not only benefits theory development but also has significant practical implications. Ultimately, the better we understand the interaction between heuristic biases and risk perception, the greater the opportunity to improve the quality of investment decisions and overall market stability.

4. CONCLUSION

Based on the research results, it can be concluded that among millennials in West Java, heritable biases influence investment decisions. Therefore, millennials exhibit behavioral biases when making investment decisions. This can have a positive impact if millennials have sufficient information and knowledge. However, this can also have a negative impact if the millennial generation only relies on their intuition in making investment decisions. In addition, it has been proven that there is an influence of risk propensity on investment decisions. millennial generation in West Java. Thus, it can be concluded that the millennial generation in West Java when investing tends to rely on their tendency to accept risks based on their experience in investing in the past. Therefore, the more experience millennials have in investing, the better their decision-making will be. This is because someone with more

investment experience will be better able to recognize potential risks and will naturally be more cautious in making future investment decisions.

There are several limitations in this study, including the fact that the unit of analysis used in this study is relatively small when compared to the total number of millennials in West Java. This is because there is no special institution that provides specific data regarding the profile of the millennial generation in West Java. Therefore, there are limitations for the author in reaching all millennial generations in West Java, especially those who have invested. Further research can also conduct further research by comparing the behavior of several different generations in making investments and/or research in different regions because each region has different customs and habits that may influence the behavior of each individual.

5. REFERENCES

- Akin, I. (2022). The Most Common Behavioral Biases among Young Adults in Bristol, UK and Istanbul. *Financial Markets, Institutions and Risks*, 6 (1), 27–39. [https://doi.org/10.21272/fmir.6\(1\).27-39.2022](https://doi.org/10.21272/fmir.6(1).27-39.2022)
- Atif Sattar, M., Toseef, M., & Fahad Sattar, M. (2020). Behavioral Finance Biases in Investment Decision Making. *International Journal of Accounting, Finance and Risk Management*, 5 (2), 69. <https://doi.org/10.11648/j.ijafrm.20200502.11>
- bandung.kompas.com. (2022, January 25). *Investors in West Java Increase by 153 Percent in 2021, Majority Millennials* Page all - Kompas.com . <https://bandung.kompas.com/read/2022/01/25/130324478/investor-di-jabar-naik-153-persen-pada-2021-mayoritas-milenial?page=all>
- Bateman, T. S., & Zeithaml, C. P. (1989). The psychological context of strategic decisions: A model and convergent experimental findings. *Strategic Management Journal*, 10 (1), 59–74. <https://doi.org/10.1002/smj.4250100106>
- Bogunjoko, A. (2021). *Impact of Behavioral Finance on Investment Decisions Investigation into How Psychological Factors Affect Investment Decisions Among Millennial Investors in Nigeria*. National College of Ireland.
- Buckley, P. J., Chen, L., Clegg, L. J., & Voss, H. (2018). Risk propensity in the foreign direct investment location decisions of emerging multinationals. *Journal of International Business Studies*, 49 (2), 153–171. <https://doi.org/10.1057/s41267-017-0126-4>
- Charles Schwab. (2021). *Schwab Generation Investor Study 2021*. <https://www.aboutschwab.com/generation-investor-study-2021>
- Combrink, S., & Lew, C. (2020). Potential Underdog Bias, Overconfidence and Risk Propensity in Investor Decision-Making Behavior. *Journal of Behavioral Finance*, 21 (4), 337–351. <https://doi.org/10.1080/15427560.2019.1692843>
- Elhussein, N. H. A., & Abdelgadir, J. N. A. (2020). Behavioral Bias in Individual Investment Decisions: Is It a Common Phenomenon in Stock Markets? *International Journal of Financial Research*, 11 (6), 25. <https://doi.org/10.5430/ijfr.v11n6p25>
- Farooq, A., & Sajid, M. (2015). Factors Affecting Investment Decision Making: Evidence from Equity Fund Managers and Individual Investors in Pakistan. In *Research Journal of Finance and Accounting*, 6(9). On line. www.iiste.org
- Gitau, G. G., Kiragu, D. N., & Riro, G. K. (2019). Effect of Heuristic Factors and Real Estate Investment in Embu County, Kenya. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 8(4). <https://doi.org/10.6007/ijarafms/v8-i4/5183>
- Goyal, P., Gupta, P., & Yadav, V. (2021). Antecedents to heuristics: decoding the role of herding and prospect theory for Indian millennial investors. *Review of Behavioral Finance*. <https://doi.org/10.1108/RBF-04-2021-0073>

- Haldar, A., & Sethi, N. (2021). The news effect of COVID-19 on global financial market volatility. *Bulletin of Monetary Economics and Banking*, 24, 33–58. <https://doi.org/10.21098/bemp.v24i0.1464>
- Ishfaq, M., & Kashif Khurshid, M. (2016). Risk Perception is a Mediator between Heuristic Bias and Risky Investment Decision; Empirical Evidence from Pakistan's Equity Markets. In *Research Journal of Finance and Accounting www.iiste.org ISSN* (Vol. 7, Issue 21). On line. www.iiste.org
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis Of Decisions Under Risk By. *Econometrica (Journal of The Econometric Society)*, 47(2), 263–292. <https://doi.org/10.4324/9780203070710.pt2>
- Kannadhasan, M. (2015). Role of Behavioral Finance In Investment Decisions Faculty, Bim, Trichy. *ResearchGate*, July. https://www.researchgate.net/profile/Manoharan_Kannadhasan/publication/265230942_ROLE_OF_BEHAVIOURAL_FINANCE_IN_INVESTMENT_DECISIONS/links/55ac75b608ae481aa7ff5a80.pdf
- Karmila, N., Pahlevi, C., & Kadir, N. (2022). The Effect of Financial Behavior and Literacy on Investment Decisions in the Millennial Generation of Makassar City. In *International Journal of Innovative Science and Research Technology* (Vol. 7, Issue 1). www.ijisrt.com211
- Kartini, K., & NAHDA, K. (2020). Behavioral biases on investment decisions: A case study in Indonesia. *The Journal of Asian Finance, Economics and Business*, 8 (3), 1231–1240.
- Khan, H. A. (2021). An Exploratory Study of Millennial Investors and Psychological Biases Coalesced around Decision Making Behavior. *Business Research and Innovation*, 340–360.
- Masomi, SR, & Ghayekhlou. (2010). Consequences of human behaviors' in Economics : the Effects of Behavioral Factors in Investment decision making at Tehran Stock Exchange. *International Conference on Business and Economics Research*, 1(1), 234–237.
- Metawa, N., Hassan, MK, Metawa, S., & Safa, MF (2019). Impact of behavioral factors on investors' financial decisions: case of the Egyptian stock market. *International Journal of Islamic and Middle Eastern Finance and Management*, 12 (1), 30–55. <https://doi.org/10.1108/IMEFM-12-2017-0333>
- Mulyani, E., Fitra, H., & Honesty, FF (2021). Investment Decisions: The Effect of Risk Perceptions and Risk Propensity for Beginner Investors in West Sumatra. *Proceedings of the Seventh Padang International Conference On Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2021)*, 49–55.
- Nooraie, M. (2012). Manager's Risk Propensity and Strategic Decision-making Processes. *Journal of Basic and Applied Scientific Research*, 2 (11), 11043–11055.
- Normawati, R., Rahayu, S., & Worokinasih, S. (2021, May 12). *Financial Knowledge, Digital Financial Knowledge, Financial Attitude, Financial Behavior and Financial Satisfaction on Millennials*. <https://doi.org/10.4108/eai.6-3-2021.2305967>
- Omoruyi, A., & James Ilaboya, O. (2019). Does Behavioral Biases Influence Individual Investment Decisions. *Management Science Review*, 10 (1), 68–89. <https://www.uniben.edu>
- Rahman, M., & Gan, S.S. (2020). Generation Y investment decisions: an analysis using behavioral factors. *Managerial Finance*, 46 (8), 1023–1041. <https://doi.org/10.1108/MF-10-2018-0534>
- Riaz, L., & Imran Hunjra, A. (2015). Relationship between Psychological Factors and Investment Decision Making: The Mediating Role of Risk Perception. In *Soc Sci Pakistan Journal of Commerce and Social Sciences* (Vol. 9, Issue 3).
- Ritter, J. R. (1988). The Buying and Selling Behavior of Individual Investors at the Turn of the Year. *The Journal of Finance*, 43 (3), 701–717. <https://doi.org/10.1111/j.1540-6261.1988.tb04601.x>

- Saivasan, R., & Lokhande, M. (2022). Influence of risk propensity, behavioral biases and demographic factors on equity investors' risk perception. *Asian Journal of Economics and Banking* , 6 (3), 373–403. <https://doi.org/10.1108/AJEB-06-2021-0074>
- Shah, S. F., Alshurideh, M., Kurdi, B. Al, & Salloum, S. A. (2021). *The Impact of the Behavioral Factors on Investment Decision-Making: A Systemic Review on Financial Institutions* (pp. 100–112). https://doi.org/10.1007/978-3-030-58669-0_9
- Shah, SZA, Ahmad, M., & Mahmood, F. (2018). Heuristic biases in investment decision-making and perceived market efficiency. *Qualitative Research in Financial Markets*, 10 (1), 85–110. <https://doi.org/10.1108/QRFM-04-2017-0033>
- Sharma, S., & Lyall, B. W. (2021). A Study on The Effect of Major Behavioral Biases of Male and Female Investors on Risk Propensity *PJAEE*, 18 (1) (2021) A Study on The Effect of Major Behavioral Biases of Male and Female Investors on Risk Propensity. In *Journal Of Archeology Of Egypt/Egyptology* (Vol. 18, Issue 1).
- Sharma, S., & Lyall, B. W. (2022). An Analysis on Risk Propensity and Investment Pattern of Male and Female Investors in Financial Investment. In *Journal of Positive School Psychology* (Vol. 2022, Issue 3). <http://journalppw.com>
- Shefrin, H. (2001). BEHAVIORAL CORPORATE FINANCE. *Journal of Applied Corporate Finance* , 14 (3), 113–126. <https://doi.org/10.1111/j.1745-6622.2001.tb00443.x>
- Sitkin, S. B., & Pablo, A. L. (1992). Reconceptualizing the Determinants of Risk Behavior. *Academy of Management Review*, 17 (1), 9–38. <https://doi.org/10.5465/amr.1992.4279564>
- Ul Abdin, S. Z., Qureshi, F., Iqbal, J., & Sultana, S. (2022). Overconfidence bias and investment performance: A mediating effect of risk propensity. *Borsa Istanbul Review* , 22 (4), 780–793. <https://doi.org/10.1016/j.bir.2022.03.001>
- UNCTAD. (2021). *World Investment Report 2021: Investing in sustainable recovery* . United Nations Conference on Trade and Development.
- Waheed, H., Ahmed, Z., Saleem, Q., & Mohy Ul Din, S. (2020). The Mediating Role of Risk Perception in the Relationship between Financial Literacy and Investment Decision. *International Journal of Innovation, Creativity and Change*, 14 (4), 112–131.
- Widjaja, R., & Pertiwi, D. (2021). The Influence Of Emotional Factors, Materialism, Risk Perception, And Financial Literacy On The Tendency Of Debt Of Millennial Generation In Surabaya. *International Journal of Financial and Investment Studies (IJFIS)* , 1 (2), 85–93. <https://doi.org/10.9744/ijfis.1.2.85-93>