

The Influence of Availability Bias, Herding Bias, Disposition Effect, and Overconfidence on Investment Decisions through Risk Perception

Yandi Suprpto^{1*}, Fathir Suria Marika Putri², Candy³

^{1,2,3}Universitas Internasional Batam

**Corresponding Author: yandi.suprpto@uib.ac.id*

Article History

Received: 06-09-2026

Revised: 10-09-2026

Published: 30-09-2026

Keywords: Availability bias, herding bias, disposition effect, risk perception, investment decision

ABSTRACT

The purpose of this study is to investigate how generation X, Y, and Z investors in Batam City are related to availability bias, disposition effect, herding bias, overconfidence bias, risk perception, and investment decisions. After 410 people were selected through purposive sampling technique, the data were processed using PLS-SEM method. The results show that overconfidence, herding bias, disposition effect, and risk perception have a positive impact on investment decisions. In contrast, availability bias has no direct impact. In addition, the results of the study show that risk perception serves as a link between availability bias, herding bias, and overconfidence bias with investment decision, however, the disposition effect with investment decision is not significant.

INTRODUCTION

Investing is one way individuals manage and develop financial assets to achieve future financial well-being. In the modern context, investing is not only an economic activity but also an important part of a financial planning strategy for individuals and families. Information and knowledge are also fundamental to helping shape investment decisions (R et al., 2025).

Investment intentions and investment decision outcomes are significantly influenced by financial literacy and behavioral biases (Atif Sattar et al., 2020).

A person's financial behavior is often influenced by cognitive biases that lead to deviations from rational decisions (Mohanty et al., 2024). In addition to financial capability, psychological factors also play a role in shaping individual financial behavior (Khornida Marheni et al., 2025). For example, overconfidence bias can encourage investors to overestimate investment outcomes, leading to greater risk-taking and suboptimal portfolio performance (Gabhane et al., 2023). Overconfidence can reduce investment quality and individual investment performance (Salman et al., 2021). Furthermore, other cognitive biases, such as availability bias and the disposition effect, also influence individuals' information assessment and investment decisions.

Availability bias refers more to information that is easily accessible or recently received, thus assessing this information as more important than information from the past (Acharya et al., 2025). This bias makes investors more willing to take risks after experiencing a profit, because recent positive information is still embedded in memory, and conversely, after experiencing a loss, investors tend to avoid risks because the experience is still embedded in the mind (Mittal, 2022). Meanwhile, the disposition effect refers to the tendency of investors to immediately liquidate profitable investments while maintaining unprofitable investments for a long period of time, this bias is associated with lower investment performance and is more common in less experienced and less careful investors (Almansour et al., 2023). Herding bias is a psychological tendency, in which individuals imitate others without seeking information and analyzing more deeply (Khairunnisa et al., 2023).

When investors are more likely to follow the decisions or actions of other investors, it can lead to asset price bubbles and changes in market trends (Budiman et al., 2025). Research conducted by Jain et al. (2023) found that risk perception serves as a partial mediator in the correlation between overconfidence bias and investment decisions, as well as between availability bias and investment decisions.

Risk is a complex issue that needs to be understood in a financial context because each individual has a different perspective (Zhang et al., 2022). An individual's perspective on risk, which represents a personal assessment of the potential losses or gains associated with an investment, plays a crucial role in the decision-making process. The concepts of risk and uncertainty are closely related in determining the risk perceived by investors, with risk perception being a crucial component in the decision-making process to minimize potential uncertainty (Wangzhou et al., 2021). Risk perception describes how investors view financial risks based on their concerns and experiences (Ahmed et al., 2022). When investors experience losses from investments, their perception of future risk can increase, while the experience of gaining profits can decrease their perception of risk.

Previous studies have examined behavioral biases in investment decisions, but the results have been mixed. Some studies suggest that availability bias, disposition effect, herding bias, and overconfidence influence investment decisions, while others report negligible effects. Furthermore, previous studies have largely focused on specific investor demographics, while investigations of Generation X, Y, and Z investors remain limited, particularly in Batam City. Each generation may have unique attitudes and risk perceptions regarding financial decisions. Therefore, this study aims to investigate the impact of behavioral biases on investment decisions, with risk perception as a mediating variable, among Generation X, Y, and Z investors in Batam City.

This research is expected to provide a deeper understanding of the factors that influence investment decisions from an investor's perspective. The findings are expected to contribute to the development of behavioral finance. Furthermore, financial practitioners and institutions in the financial sector can use the findings to develop financial education and investment management strategies that are better tailored to investors' characteristics.

RESEARCH METHODS

The success of research is greatly influenced by the accuracy of selecting an appropriate methodology used to achieve results with a strong scientific foundation. Research methods basically aim to obtain new knowledge, address the research problems, and test or prove previously established hypotheses (Nurhaswinda et al., 2025). One of the main components in the methodology is the selection of the research approach, because this approach will determine the method of data collection, analytical techniques, and the process of interpreting research results. Mistakes in understanding or selecting a research approach can cause research results to be invalid or not in accordance with the objectives that have been formulated from the beginning (Agina Tiani et al., 2025). This research uses a quantitative approach, namely a research method that is carried out systematically and structurally with a design that has been determined from the beginning until the research process is completed, so that its implementation is relatively unaffected by changing field conditions (Sarwono, 2022).

The participants in this study were investors from Generation X, Y, and Z living in Batam City with various income sources. This study examines investment decision-making influenced by various behavioral biases, with risk perception as a mediator. Risk perception is crucial in explaining how behavioral biases influence investors evaluations of prospective risks and rewards before making investment decisions. The sampling method used purposive sampling, where sample characteristics are deliberately determined based on the research objectives, ensuring that only individuals who meet certain criteria are selected as respondents. Individuals who have invested or are currently investing in financial instruments are the subjects of this study.

RESULTS AND DISCUSSION

The questionnaire in this study was successfully distributed to 410 respondents, the collected data was then used as a reference in the analysis process to examine the problem formulation and submit hypotheses.

Table 1. Respondent profile

Criteria	Category	Amount	Percentage
Age	18-20 years old	106	29.5%
	21-23 years old	104	25.4%
	24-26 years old	67	16.3%
	27-29 years old	50	12.2%
	30-32 years old	41	10%
	33-36 years	21	5.1%
	37-39 years old	12	2.9%
	>40 years	9	2.2%
	Total	410	100%
Last level of education	High school/vocational school or equivalent	199	48.5%
	Diploma/Bachelor's Degree	195	47.6%
	S2	15	3.7%
	S3	1	0.2%
Status work	Government employees	61	14.9%
	Private employees	127	31%
	Businessman	61	14.9%
	Students	154	37.6%
	Doesn't work	7	1.7%
	Total	410	100%
Average Monthly Income	>100.000.00	54	13.2%
	1.000.000.00 – 5.000.000.00	199	48.5%
	6.000.000.00 – 10.000.000.00	118	28.8%
	10.000.000.00 – 15.000.000.00	26	6.3%
	> 15.000.000.00	13	3.2%
	Total	410	100%

Source: Processed from research data, 2026

CONVERGENT VALIDITY TEST

Convergent validity testing was conducted to determine how well construct indicators consistently reflect the variables under study. Convergent validity testing was accepted or valid when the outer loading indicator value was >0.7 and the average variance extracted (AVE) was >0.5 . The test results showed that several indicators had outer loadings of 0.63–0.65. However, all AVE values exceeded the minimum threshold, thus all constructs were still deemed to meet the convergent validity criteria.

Table 2. Convergent validity

Indicator	outer loadings	AVE	results
AB1	0.755	0.556	Valid
AB2	0.717		
AB3	0.715		
AB4	0.778		
AB5	0.762		
DE1	0.815	0.598	Valid
DE2	0.766		
DE3	0.634		
DE4	0.808		
DE5	0.828		
HB1	0.841	0.601	Valid
HB2	0.779		
HB3	0.758		
HB4	0.710		
HB5	0.784		
OC1	0.820	0.646	Valid
OC2	0.773		
OC3	0.793		
OC4	0.829		
RP1	0.793	0,565	Valid
RP2	0.658		
RP3	0.763		
RP4	0.796		
RP5	0.739		
ID1	0.814	0.589	Valid
ID2	0.748		
ID3	0.647		
ID4	0.800		
ID5	0.814		

DISCRIMINANT VALIDITY TEST

The ability of each construct to represent a concept distinct from other constructs is evaluated through a discriminant validity test. The Fornell-Larcker criterion and the heterotrait-monotrait ratio (HTMT) value are used to conduct this test. According to the Fornell-Larcker criterion, a construct is considered to have discriminant validity if the square root of the average variance extracted (AVE) for each construct is greater than the relationship between the constructs (Hair jr et al., 2021). According to the HTMT value, a construct is considered to have discriminant validity if the HTMT value is <0.90 (Sarstedt et al., 2022).

Table 3. Fornell -Larcker Discriminant Validity Test

Indicator	Availability bias	Disposition effect	Herdning bias	Investment decision	Overconfidence	Risk perception
Availability bias	0,746	-	-	-	-	-

Disposition effect	0,589	0,774	-	-	-	-
Herding bias	0,649	0,537	0,775	-	-	-
Investment decision	0,530	0,447	0,565	0,767	-	-
Overconfidence	0,529	0,405	0,501	0,716	0,804	-
Risk perception	0,569	0,390	0,555	0,679	0,684	0,752

Table 4. Heterotrait-Monotrait Ratio (HTMT) Discriminant Validity Test

Indikator	Availability bias	Disposition effect	Herding bias	Investment decision	Overconfidence	Risk perception
Availability bias	-	-	-	-	-	-
Disposition effect	0,727	-	-	-	-	-
Herding bias	0,795	0,647	-	-	-	-
Investment decision	0,654	0,552	0,683	-	-	-
Overconfidence	0,652	0,494	0,609	0,868	-	-
Risk perception	0,705	0,476	0,672	0,829	0,841	-

RELIABILITY TEST

In reliability testing, composite reliability , cronbach's alpha , and rho-A values are used to measure the extent to which the indicators consistently demonstrates the construct. A value exceeding 0.7 indicates that the indicators is capable of producing consistent and reliable results (Sarstedt & Liu, 2024).

Table 5. Reliability Test

Indicator	Cronbach's Alpha	Rho-A	Composite Reliability
Availability bias	0.801	0.804	0.862
Disposition Effect	0.829	0.811	0.866
Herding Bias	0.833	0.832	0.877
Investment decision	0.823	0.818	0.880
Indicator	Cronbach's Alpha	Rho-A	Composite Reliability
Overconfidence	0.817	0.833	0.881
Risk perception	0.833	0.838	0.883

DIRECT EFFECT TEST

The direct influence between constructs in the research model is measured using the direct effect test. The path coefficient and p-value are used to assess this test. A significant relationship is indicated if the p-value is <0.05 , indicating a direct influence between the constructs discussed (Ringle et al., 2023).

Indicator	Coefficient	P-Value	Results	Hypothesis
Availability bias > Investment decision	0.001	0.988	Not significant	Rejected
Availability bias > Risk perception	0.202	0.002	Significant (positive)	Accepted
Disposition effect > Investment decision	0.087	0.037	Significant (positive)	Accepted
Disposition effect > Risk perception	-0.033	0.450	Not Significant	Rejected
Herding bias > Investment decision	0.159	0.004	Significant (positive)	Accepted
Herding bias > Risk perception	0.194	0.001	Significant (positive)	Accepted
Overconfidence > Investment decisions	0.413	0,000	Significant (positive)	Accepted
Overconfidence > Risk perception	0.494	0,000	Significant (positive)	Accepted
Risk perception > Investment decisions	0.274	0,000	Significant (positive)	Accepted

Hypothesis 1 is rejected, this relationship was insignificant because investment decisions are generally not only based on the most easily remembered information but are also influenced by other considerations, such as analysis of market conditions, investment objectives, and the risks the investor is willing to bear. Therefore, the ease of recalling or obtaining information does not affect a person's investment decision. In this situation, it indicates that the investor's decision-making process is not only determined by the information that most easily comes to mind, but also considers other components that contribute to decision-making. This finding confirms the results of previous research conducted by Nayara Labiba and Sutrisno (2025) that availability bias is not always a major factor in influencing investment decisions, especially when investors consider other factors more in the decision-making process.

Hypothesis 2 is accepted, this relationship is significant because information that is easily remembered or frequently received tends to be more easily used as a reference by investors in assessing risk. Thus, risk perception is shaped not only by objective information but also by the information that most readily comes to mind. This study yielded findings similar to those Nizar (2024) stating that availability bias occurs because individuals tend to use the information that most quickly comes to mind. Furthermore, these results are also supported Jain et al. (2023) and Cuandra et al. (2024), who suggest that availability bias can strengthen risk perception because individuals assessment processes are often influenced by readily accessible information rather than completely objective evaluations.

Hypothesis 3 is accepted, this relationship is significant because investors tendency to immediately realize profits and hold on to investments that experience losses can influence how they make subsequent investment decisions. This condition indicates that in addition to rational

considerations, psychological and emotional elements influence investors' investment decisions. The findings in this study reinforce research Subandi and Basana (2021) showing that the disposition effect can influence the timing of stock purchases and sales when making investment decisions. The disposition effect influences investment decisions. (Adil et al., 2022; Bhutto et al., 2025; Daud et al., 2023)

Hypothesis 4 is rejected, the insignificance of the relationship indicates that investors' tendency to sell profitable assets or hold onto assets experiencing losses does not necessarily influence how investors perceive investment risk. This condition indicates that risk perception is more influenced by factors other than the disposition effect behavior. The findings in this study strengthen the empirical evidence reported by Nareswari et al. (2021), that the disposition effect does not always have a significant effect on risk perception. These results are also supported by Purnomo et al. (2025) who found that some behavioral biases may not directly affect risk perception in certain empirical models.

Hypothesis 5 is accepted, this relationship is significant because investors often consider the actions of the majority as a consideration in making investment decisions. When many investors choose the same decision, individuals tend to be more confident in following that decision even though it is not necessarily based on personal analysis. This condition indicates that in certain situations, investors do not fully rely on personal information, but tend to imitate the actions of other investors in the market. The results obtained in this study confirm the findings Ahmad and Wu (2022) regarding the influence of herding on investment decisions in the stock market. In addition, these results are also supported by Abideen et al. (2023), Ahmed et al. (2022), and Cuandra et al. (2024) who found that the tendency to follow majority decisions is one of the characteristics of investor behavior that is influenced by herding bias.

Hypothesis 6 is accepted, and this relationship is significant because the tendency to follow the majority decision can influence how investors perceive the risk level of an investment. Decisions made by many people are often perceived as signals that the risks faced are more acceptable, thus influencing investors' risk perceptions. This condition illustrates that investors tend to feel safer when many other parties make the same decision, even though the actual risk level does not change. This is further supported by findings of Almansour et al. (2023) explaining that herding bias arises from investors' tendency to avoid risk and follow the majority. This is supported by empirical evidence from Cuandra et al. (2024) and Ahmed et al. (2022) confirming that following the group can influence risk perception. Seraj et al. (2022) also indicates that the higher the herding bias, the higher the investor's risk perception.

Hypothesis 7 is accepted, this relationship is significant because investors who are very confident in their abilities and knowledge tend to be more confident in making investment decisions, making investors more daring to act and quicker in determining their investment choices. These findings indicate that investors with high levels Adil et al. (2022) of

overconfidence tend to be more active and bold in making investment decisions. These results align with research showing that overconfidence has a positive and significant effect on investment decisions. This finding is also supported by Seraj et al. (2022), Bihari et al. (2022), Almansour et al. (2023), and Cuandra et al. (2024) who identified overconfidence as one of the most dominant behavioral biases in influencing investment decisions.

Hypothesis 8 is accepted, this relationship is significant because overconfidence can influence how investors assess investment risk. Investors who are confident in their analytical abilities tend to assess risk differently than more cautious investors, so their risk perception is also influenced by their level of confidence. These results align with research conducted by Jain et al. (2023), which explains that overconfident individuals tend to overestimate what they know and can do. Furthermore, Cuandra et al. (2024) support this finding, showing that overconfidence has a significant impact on risk perception, as overconfidence can influence how investors assess and manage their investment risk.

Hypothesis 9 is accepted, this relationship is significant because risk perception is an important consideration before investors make decisions. The better investors understand the risks they might face, the more likely they are to consider various alternatives before making an investment decision. According to research by Kurnijanto et al. (2025), risk perception has a positive impact on investment decisions, where better knowledge of risk can encourage more rational decision-making. This finding is also supported by Ahmed et al. (2022) and Jain et al. (2023) which found that risk perception plays a significant role in the investment decision-making process under unstable market conditions.

INDIRECT EFFECT TEST

Indirect effect test aims to identify the extent of the influence of the independent variable on the dependent variable through the mediating variable. The test results are determined by observing the specific indirect effect value in the bootstrapping results. The significance of the indirect effect is determined based on the test results meeting a p-value <0.05 . A significant indirect effect indicates that the mediating variable plays a role in explaining the relationship between the independent and dependent variables (Hair Joseph et al., 2022).

Indicator	P-Value	Results
AB>RP>ID	0.012	Significant (positive)
DE>RP>ID	0.466	Not significant
HB>RP>ID	0.008	Significant (positive)
OC>RP>ID	0.000	Significant (positive)

Hypothesis 10 is accepted, the results of the indirect effect test indicate that availability bias, herding bias, and overconfidence have a significant indirect influence on investment decisions through risk perception with p-values of 0.012, 0.008, and 0.000, respectively, so that hypothesis 10 on this path is accepted. This shows that risk perception can be an intermediary

variable that explains how behavioral bias affects investment decisions, where changes in risk perception can influence the direction of investor decision-making.

However, the indirect influence of the disposition effect on investment decisions through risk perception was found to be insignificant with a p-value of 0.466. This indicates that risk perception is not always able to mediate the entire relationship between behavioral bias and investment decisions.

R SQUARE TEST

R-Square (R^2) test is used to estimate the proportion of the dependent variable's variability that can be explained by the independent variables in a research model. The higher the R^2 value, the better the model's predictive ability. According to Hair et al. (2021), an R^2 value of 0.75 indicates a strong category, 0.50 a moderate category, and 0.25 a weak category in the PLS-SEM structural model.

Indicator	R-Squared	R-Squared Adjusted
Risk perception	0.547	0.543
Investment decision	0.611	0.606

F-SQUARE TEST

F-Square (f^2) is used to evaluate the magnitude of the effect given by each exogenous variable on the endogenous variable in the PLS-SEM model through changes in the R^2 value (Hair et al., 2021). The results of the f-square (f^2) test show that Overconfidence has the greatest influence on risk perception (0.363) with a moderate category, while Herding bias (0.043), availability bias (0.042), and disposition effect (0.001) have a small influence.

Overconfidence also has the largest influence (0.216) on investment decisions, with a moderate impact. Other variables, such as risk perception (0.087), herding bias (0.032), availability bias (0.000), and disposition effect (0.0012), have only a small to very small impact. This indicates that overconfidence is the most dominant variable in this research model.

Indicator	Availability bias	Disposition effect	Herding bias	Investment Decision	Overconfidence	Risk perception
Availability bias	-	-	-	0,000	-	0,042
Disposition effect	-	-	-	0,0012	-	0,001
Herding bias	-	-	-	0,032	-	0,043
Investment decision	-	-	-	-	-	-
Overconfidence	-	-	-	0.216	-	0.363
Risk perception	-	-	-	0.087	-	-

CONCLUSION AND SUGGESTIONS

This research shows that not all behavioral biases have a direct influence on investment decisions. Overconfidence, herding bias, disposition effect, and risk perception have been shown to have a positive influence on investment decisions, while availability bias does not show a direct influence. Risk perception also plays a mediating role in some relationships, such as availability bias, herding bias, and overconfidence. Overconfidence is the main factor influencing investment decisions.

This study has limitations because it only involved investors in Batam City, so the results cannot be generalized to a wider area. Furthermore, several insignificant relationships indicate that other factors may not have been included in the model. Therefore, it is recommended that future research expand the region and sample size and include additional variables such as financial knowledge, emotional intelligence, or market perception. Furthermore, for more in-depth results on investor behavior, it is recommended to consider a qualitative or mixed methods approach.

BIBLIOGRAPHY

- Abideen, Z. U. I., Ahmed, Z., Qiu, H., & Zhao, Y. (2023). Do behavioral biases affect investors' investment decision making? Evidence from the Pakistani equity market. *Risks*, 11(6). <https://doi.org/10.3390/risks11060109>
- Acharya, Y., Rajdev, A. A., & Bhuvu, K. (2025). *Impact of cognitive biases on investment decisions-a mediating role of emotional intelligence in relationship between confirmation bias and investment decision*. <https://acr-journal.com/>
- Adil, M., Singh, Y., & Ansari, M. S. (2022). How financial literacy moderate the association between behaviour biases and investment decision? *Asian Journal of Accounting Research*, 7(1), 17–30. <https://doi.org/10.1108/AJAR-09-2020-0086>
- Agina Tiani, Annisa Suci Maulani, Hesti Desmira Iryani, Sinta Fitriani, Rully Hidayatullah, & Harmonedi. (2025). A review of procedural errors in educational research. *QOSIM Journal of Social Education & Humanities*, 3 (2), 762–768. <https://doi.org/10.61104/jq.v3i2.1115>
- Ahmad, M., & Wu, Q. (2022). Does herding behavior matter in investment management and perceived market efficiency? Evidence from an emerging market. *Management Decision*, 60 (8), 2148–2173. <https://doi.org/10.1108/MD-07-2020-0867>

- Ahmed, Z., Rasool, S., Saleem, Q., Khan, M. A., & Kanwal, S. (2022). Mediating role of risk perception between behavioral biases and investor's investment decisions. *SAGE Open*, 12(2). <https://doi.org/10.1177/21582440221097394>
- Almansour, B. Y., Elkrghli, S., & Almansour, A. Y. (2023a). Behavioral finance factors and investment decisions: A mediating role of risk perception. In *Cogent Economics and Finance* (Vol. 11, Number 2). Cogent OA. <https://doi.org/10.1080/23322039.2023.2239032>
- Anifa, A. S., & Soegiharto, S. (2023). Does the psychology of investment decisions depend on risk perception and financial literacy? *MAKSIMUM*, 13(2), 152. <https://doi.org/10.26714/mki.13.2.2023.152-163>
- 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>
- Banerjee, A. V. (1992). A simple model of herd behavior. *The Quarterly Journal of Economics*, 107(3), 797–817. <https://doi.org/10.2307/2118364>
- Barberis, N., Shleifer, A., & Vishny, R. (1998). A model of investor sentiment. *Journal of Financial Economics*, 49(3), 307–343. [https://doi.org/10.1016/S0304-405X\(98\)00027-0](https://doi.org/10.1016/S0304-405X(98)00027-0)
- Bhutto, S. A., Nazeer, N., Saad, M., & Talreja, K. (2025). Herding behavior, disposition effect, and investment decisions: A multi-mediation analysis of risk perception and dividend policy. *Acta Psychologica*, 255. <https://doi.org/10.1016/j.actpsy.2025.104964>
- Bihari, A., Dash, M., Kar, S. K., Muduli, K., Kumar, A., & Luthra, S. (2022). Exploring behavioural bias affecting investment decision-making: a network cluster based conceptual analysis for future research. In *International Journal of Industrial Engineering and Operations Management* (Vol. 4, Numbers 1–2, pp. 19–43). Emerald Publishing. <https://doi.org/10.1108/IJIEOM-08-2022-0033>
- Bilal, A. R., & Ahmad, Z. (2023). *Investigating the mediating role of financial literacy on the relationship between women entrepreneurs' behavioral biases and investment decision making*. <https://www.researchgate.net/publication/373101854>
- Budiman, J., Yodiputra, J., Candy, C., & Agustin, I. N. (2025). How overconfidence and mental accounting influence investments? The moderating role of financial literacy. *Asian Management and Business Review*, 1–18. <https://doi.org/10.20885/ambr.vol5.iss1.art1>

- Cuandra, F., Stefhani Susanto, Hesniati, H., & Candy, C. (2024). Deciphering investment decision in fintech: The role of behavioral bias and risk perception. *Jurnal Organisasi Dan Manajemen*, 20(2), 271–286. <https://doi.org/10.33830/jom.v20i2.8248.2024>
- Gabhane, D., Sharma, Dr. A. M., Mukherjee, Dr. R., S, Dr. A. P., & P, Dr. M. R. (2023). *Behavioral finance: Exploring the influence of cognitive biases on investment decisions*. https://www.rgcms.edu.in/wp-content/uploads/2023/12/328_BEHAVIORALFINANCE-1.pdf
- Gilovich, Thomas., Griffin, D. W. ., & Kahneman, Daniel. (2002). *Heuristics and biases* (T. Gilovich, D. Griffin, & D. Kahneman, Eds.). Cambridge University Press. <https://doi.org/10.1017/CBO9780511808098>
- Hair Joseph, Hult G Tomas, Ringle Christian, & Sarstedt Marko. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM) third edition*. <https://us2.sagepub.com/en-us/nam/a-primer-on-partial-least-squares-structural-equation-modeling-pls-sem/book270548>
- Hair jr, J. F., M Hult, G. T., & Ringle, C. M. (2021). *Classroom companion: Business partial least squares structural equation modeling (PLS-SEM) using R*. <https://link.springer.com/book/10.1007/978-3-030-80519-7>
- Hirdinis, M. (2024). The risks to investment decisions: Can financial knowledge and investor's experience be moderate? *Studies in Business and Economics*, 19(3), 137–155. <https://doi.org/10.2478/sbe-2024-0048>
- Hutahayan, B., Fadli, M., Amimakmur, S. A., & Dewantara, R. (2024). Investment decision, legal certainty and its determinant factors: evidence from the Indonesia Stock Exchange. *Cogent Business and Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2332950>
- Jain, J., Walia, N., Singla, H., Singh, S., Sood, K., & Grima, S. (2023). Heuristic biases as mental shortcuts to investment decision-making: A mediation analysis of risk perception. *Risks*, 11(4). <https://doi.org/10.3390/risks11040072>
- Khairunnisa, Daud, I., & Ramadhan, R. (2023). Herding behavior, disposition effect & investment decision: Testing the role of risk perception. In *IJAFIBS* (Vol. 11, Number 3). www.ijafibs.pelnus.ac.id
- Khornida Marheni, D., Tazkia, P., Wijayanti, C. A., Ilyana, H., Hashim, C., & Yuwono, W. (2025). Investigating the financial behavior in Batam's younger generations: Does financial self-efficacy mediate? In *JDM (Jurnal Dinamika Manajemen)* (Vol. 16, Number 1). <https://doi.org/https://doi.org/10.15294/jdm.v16i1.14942>

- Kurnijanto, A. W., Videlia Sumbodo, K., Inggrit Wijaya, L., & Silvia Sutejo, B. (2025). *The influence of behavioral bias on investment decision with Risk perception as a mediating variable: A study on generation Z at the Indonesia stock exchange*. 5(6). <https://doi.org/10.38035/dijefa.v5i6>
- Manalu, S., Aprilia Hellyani, C., & Setiawati, D. R. (2023). AIJBM) ISSN-2379-106X, www. In *American International Journal of Business Management* (Vol. 6). www.aijbm.com
- Mittal, S. K. (2022). Behavior biases and investment decision: theoretical and research framework. In *Qualitative Research in Financial Markets* (Vol. 14, Number 2, pp. 213–228). Emerald Publishing. <https://doi.org/10.1108/QRFM-09-2017-0085>
- Mohanty, S., Patnaik, B., & Kumar Sahoo, S. (2024). Cognitive biases and financial decisions of potential investors during Covid-19: an exploration. *Arab Gulf Journal of Scientific Research*, 42(3), 836–851. <https://doi.org/10.1108/AGJSR>
- Nayara Labiba, A., & Sutrisno,); (2025). The influence of financial behavioral bias in investment decisions of generation Z investors in the capital market: the moderating role of financial self-efficacy (a study of generation Z investors in Yogyakarta). *Ekombis Review: Jurnal Ilmiah Ekonomi Dan Bisnis*, 13(4), 3817–3830. <https://doi.org/10.37676/ekombis.v13i4>
- Nizar, M., & Daljono, D. (2024). The impact of availability bias and representative bias on investment decisions and performance: The role of FOMO as an intervening variable. *Journal of Economic Appreciation*, 12 (1), 71–89. <https://doi.org/10.31846/jae.v12i1.730>
- Nurhaswinda, Aliati Marsela, Ramadani Nadiah Lestiwi, Syahira Nur Haniza, Anggraini Yosi, Supia Yuyun Ayu, & Lestari Zira. (2025). *A comparison of qualitative and quantitative approaches in social research*. <https://doi.org/10.59818/jpi.v5i4.1759>
- Odean, T. (1998). Volume, Volatility, Price, and Profit When All Traders Are Above Average. *The Journal of Finance*, 53 (6), 1887–1934. <https://doi.org/10.1111/0022-1082.00078>
- Purnomo, A., Murhadi, WR, & Wijaya, LI (2025). Behavioral bias and risk perception in investment decision making: The moderating role of financial literacy. *Maranatha Journal of Management*, 24 (2), 145–162. <https://doi.org/10.28932/jmm.v24i2.10288>
- R, M., Yossinomita, Saputra, MH, R, M., & Kartika, YD (2025). *Behavioral bias (availability, representativeness, anchoring, and confirmation) toward investment decision-making* (Vol. 18, Number 1). www.bi.go.id

- Ringle, C. M., Sarstedt, M., Sinkovics, N., & Sinkovics, R. R. (2023). A perspective on using partial least squares structural equation modeling in data articles. *Data in Brief*, 48. <https://doi.org/10.1016/j.dib.2023.109074>
- Salman, M., Khan, B., Khan, S. Z., & Khan, R. U. (2021). The impact of heuristic availability bias on investment decision-making: Moderated mediation model. *Business Strategy and Development*, 4(3), 246–257. <https://doi.org/10.1002/bsd2.148>
- Sarstedt, M., Hair, J. F., Pick, M., Liengard, B. D., Radomir, L., & Ringle, C. M. (2022). Progress in partial least squares structural equation modeling use in marketing research in the last decade. *Psychology and Marketing*, 39(5), 1035–1064. <https://doi.org/10.1002/mar.21640>
- Sarstedt, M., & Liu, Y. (2024). Advanced marketing analytics using partial least squares structural equation modeling (PLS-SEM). In *Journal of Marketing Analytics* (Vol. 12, Number 1, pp. 1–5). Palgrave Macmillan. <https://doi.org/10.1057/s41270-023-00279-7>
- Sarwono, J. (2022). *Quantitative, qualitative and mixed method research methodology*. https://www.researchgate.net/publication/360403377_Quantitative_Qualitative_and_Mixed_Method_Research_Methodology
- Seraj, A. H. A., Alzain, E., & Alshebami, A. S. (2022). The roles of financial literacy and overconfidence in investment decisions in Saudi Arabia. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1005075>
- Shefrin, H., & Statman, M. (1985a). The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of Finance*, 40(3), 777–790. <https://doi.org/10.1111/j.1540-6261.1985.tb05002.xcg>
- Slovic, P. (1987). Perception of risk. *Science*, 236(4799), 280–285. <https://doi.org/10.1126/science.3563507>
- Subandi, J. R., & Basana, S. R. (2021). The effect of salience and disposition effect on stock investment decisions on investors in Surabaya. *International Journal of Financial and Investment Studies (IJFIS)*, 1(2), 77–84. <https://doi.org/10.9744/ijfis.1.2.77-84>
- Syardhana, M. F., & Prajawati, M. I. (2025). Behavioral bias and risk perception in cryptocurrency investment decisions of generation Z. *Jurnal Reviu Akuntansi Dan Keuangan*, 15(3). <https://doi.org/10.22219/jrak.v15i3.40776>
- Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior & Organization*, 1(1), 39–60. [https://doi.org/10.1016/0167-2681\(80\)90051-7](https://doi.org/10.1016/0167-2681(80)90051-7)

- Wangzhou, K., Khan, M., Hussain, S., Ishfaq, M., & Farooqi, R. (2021). Effect of regret aversion and information cascade on investment decisions in the Real Estate sector: The mediating role of risk perception and the moderating effect of financial literacy. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.736753>
- Weixiang, S., Qamruzzaman, M., Rui, W., & Kler, R. (2022). An empirical assessment of financial literacy and behavioral biases on investment decision: Fresh evidence from small investor perception. In *Frontiers in Psychology* (Vol. 13). Frontiers Media SA. <https://doi.org/10.3389/fpsyg.2022.977444>
- Zhang, M., Nazir, M. S., Farooqi, R., & Ishfaq, M. (2022). Moderating role of information asymmetry between cognitive biases and investment decisions: A mediating effect of risk perception. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.828956>