THE INFLUENCE OF HERDING, OVERCONFIDENCE, ANCHORING, LOSS AVERSION, RELIGIOSITY ON INVESTMENT DECISIONS MODERATED BY RISK TOLERANCE

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ABSTRACT

This study aims to analyze the impact of independent variables such as herding bias, overconfidence, anchoring, loss aversion, and religiosity on investment decisions moderated by risk tolerance for investors in Batam City. People who are stock investors in Batam City are the research subjects, with the sampling technique used being snowball sampling. The results showed that factors such as herding bias, overconfidence, anchoring, loss aversion, and religiosity have a significant influence on investment decisions. It is different for the risk tolerance variable, which is not proven to have a significant role in moderating the relationship between the independent variable and the dependent variable, investment decisions. This study also has limitations in terms of samples that may not be able to represent all people who invest in Batam City. Therefore, it is recommended for future research to conduct further research with a more representative sample of the population investing in Batam City.

Keywords: *Herding; Overconfidence; Anchoring; Loss Aversion; Investment Decision*

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INTRODUCTION

Understanding the various types of investments is a crucial first step for every investor. Investments can be divided into two main categories, namely financial investments and non-financial investments (Nuzula & Nurlaily, 2020). Financial investments involve placing funds in financial instruments with the expectation of obtaining financial returns. This type of investment includes the capital market and the money market (Baihaqqi & Prajawati, 2023). Whereas non-financial investments involve placing funds in real or non-financial assets. This type of investment is more physical in nature and includes various forms of assets such as gold, land, property, and others (Baihaqqi & Prajawati, 2023).

Based on data from PT Kustodian Sentral Efek Indonesia (KSEI) as of September 2023, the number of investors in the capital market is 11,729,977, and the number of investors in mutual funds is 10,994,091. Meanwhile, the number of investors in stocks and other securities reached 5,029,218, an increase of 1.63% compared to the previous month, August 2023, which was 1.22% with a total of 4,948,771. The data indicates that this increase reflects the growing interest of the public in investing, both in the form of stocks and other investment instruments.

Investment is a very important economic activity in managing wealth and planning for the financial future (Maksar et al., 2022). Wise investment decisions will yield long-term profits, but unwise decisions will result in significant financial failures (Addinpujoartanto & Darmawan, 2020). When investors face high-risk situations, psychological, emotional factors, and an objective attitude have a significant impact on decision-making. Emotions are identified as components that can make investors less rational in their decision-making. This shows that non-rational aspects, such as emotions, can play a significant role in influencing investment decisions, especially in situations involving uncertainty and risk (Holly et al. 2022).

The research by Afriani & Halmawati (2019) and Valentina & Pamungkas (2022) found that herding behavior and overconfidence in investment decisions have a positive relationship. This causes investors to look at other people's investment decisions first. By observing potential mistakes, investors can make better investment decisions. Overconfident investors will become more confident when they gain profits from their investments, and they can make decisions more boldly compared to less confident investors. Research by Robin & Angelina (2020) states that anchoring has a significant impact on investment decisions. This impacts investors because it provides a reasonable perspective and an overview of what investors should expect in situations of uncertainty and lack of information to make decisions. Additionally, the research by Handoyo *et al*. (2019) explains that loss aversion has a significant influence, indicating that in terms of investment, investors are more likely to avoid potential losses rather than seek gains. Investors tend to be more cautious in taking risks when loss aversion affects their investment decisions.

The factor of religiosity can influence investment decisions (Hussain et al., 2021). Religiosity can also influence the values and principles that a person uses when making investment decisions and managing their finances (Fitriyani & Anwar, 2022). Highly religious investors may tend to have a more cautious attitude towards taking risks in making investment decisions (Fitriyani & Anwar, 2022). The research by Ainia & Lutfi (2019) states that risk tolerance significantly affects investment decision-making. Risk tolerance is related to the level of investment decision-making in high-risk assets. Investors with a high risk tolerance will adjust the types of investments they choose based on their level of risk tolerance.

Previous research has shown that there are a number of cognitive biases and psychological factors that play an important role in investment decisions. In this context, this research aims to investigate the influence of herding bias, overconfidence, anchoring, loss aversion, and religiosity on investment decisions moderated by individual risk tolerance levels. However, research on risk tolerance in moderating investment decisions has not been extensively studied in depth. Although there are some related studies, their number is still relatively small. This indicates that further research related to this variable is needed to gain a better understanding. This research will help gain a deeper understanding of the components that influence individual investment behavior and how the risk tolerance variable can moderate its impact.

LITERATURE REVIEW, RESEARCH FRAMEWORK, AND HYPOTHESIS

Investment Decision

Investing is the act of putting money into something with the hope of making a profit in the future, but the world of investing can be something that goes up and down (Khan, 2017). However, investing through good analysis and by keeping decisions straight can lead individuals to success (Khan, 2017). To make good investment decisions, investors must understand the potential profits involved and avoid making investment decisions too quickly as it can lead to company bankruptcy (Lorenza & Wargenegara, 2022). Traditionally, investment decisions are based on investors' expectations to optimize the anticipated profits while adjusting their opinions based on new information (Wang & Nuangjamnong, 2022). Investment decision, is a decision made by individuals, companies, or organizations to allocate their funds to various assets or projects with the hope of obtaining profitable financial returns in the future (Sulistyowati et al., 2022). Investment decisions involve assessing the risks and potential returns of various types of investments, such as stocks, bonds, real estate, businesses, or other financial instruments (Afriani & Halmawati, 2019).

Herding Bias and Investment Decision

Investors will follow the majority decision due to herding (Paul & Sundaram, 2023). Herding is a behavior that tends to imitate the actions of others rather than following the information or beliefs available to oneself (Holly et al., 2022). The main reason for herding bias is due to the pressure or influence coming from people or peers around them (Afriani & Halmawati, 2019). Herding bias in the context of investment decision-making is the tendency of investors to follow what the majority of investors are doing or to follow market trends, without conducting careful analysis or considering the fundamental factors underlying the assets being invested in. This bias often occurs because investors feel comfortable or safer if they follow what many people do, especially when there is social or psychological pressure to "not miss out." Based on previous research by Theressa & Armansyah (2022); Almansour et al. (2023); Lorenza & Wargenegara (2022); Qasim et al. (2019); Afriani & Halmawati (2019); Dhakal & Lamsal (2023), it is stated that herding bias has a significantly positive effect on investment decisions.

Overconfidence and Investment Decision

Overconfident is an attitude of someone who believes in their own abilities and knowledge (Handoyo et al., 2019). Overconfident investors possess knowledge, information, and past experiences that also make them bolder in making investment decisions (Halim & Pamungkas, 2023). Beginner investors who want quick and large profits are often easily deceived (Hirdinis & Haningsih, 2023). This shows that due to

their confidence, investors believe they are more capable of trading stocks in the capital market. They believe that they are competent investors and can generate greater profits (Wang & Nuangjamnong, 2022). In line with the research findings from Halim & Pamungkas (2023); Tifany & Pamungkas (2023); Valentina & Pamungkas (2022); Hussain et al. (2021); Pinaring et al. (2023) which state that overconfidence has a significantly positive effect on investment decisions.

Anchoring and Investment Decision

According to Marheni & Anmelrina (2021), anchoring is explained as a condition where someone relies too heavily on certain information to make decisions, which can lead to incorrect decisions. This is caused by too much data that needs to be processed and a lack of time to understand it. According to Raafifalah (2021) anchoring is a phenomenon used when estimates are based on an initial value that is biased towards the initial value because the values generated from different starting points vary. The tendency to estimate a value based on the initially imagined value is known as anchoring. According to Saeed (2019) in decision-making, anchoring is a technique used by people to solve complex problems by selecting an initial reference point and gradually adjusting it to reach a final decision. Bias anchoring, in general, has a negative impact on investment decision-making, as it can lead investors to make decisions based on an initial reference point or information that may no longer be relevant (Marheni & Anmelrina, 2021). In general, in certain cases, there are situations where anchoring can have a seemingly positive influence, especially in the short term context. Based on the research findings from Raafifalah (2021); Badri & Putri (2021); Marheni & Anmelrina (2021); Dhakal & Lamsal (2023); Robin & Angelina (2020); Handoyo et al. (2019), it is explained that there is a significant positive influence of the anchoring variable on investment decisions.

Loss Aversion and Investment Decision

The concept of loss aversion was first discussed by two psychologists, Daniel Kahneman and Amos Tversky, in 1979. They analyzed that when losing, people feel pain twice as much compared to when they feel satisfaction from winning (Khan, 2017). Loss aversion is a state where a person tends to be more emotionally affected by failure than by success (Elahi et al. 2023). According to Budiman & Patricia (2021), loss aversion is a condition where a person avoids risk because they do not want to incur losses. This is also a deviant behavior based on the fear of loss, which leads to an excessive aversion to risks that could result in losses, significantly impacting investment decision-making (Rahman & Dewi, 2023). This is one of the main concepts in behavioral psychology that has been proven to have a significant impact on how people manage risk and make investment decisions (Budiman & Patricia, 2021). According to research findings from various sources, namely Khan (2017); Elahi et al. (2023); Addinpujoartanto & Darmawan (2020); Rahman & Dewi (2023); Anwar et al. (2023); Hesniati & Dedy (2021), loss aversion has a significantly positive impact on investment decisions.

Religiosity and Investment Decision

Religiosity represents the strength of one's faith or belief in a religion or religious practice, one's relationship with God, and their actions in accordance with religious principles and practices adopted in various aspects of life (Fitriyani & Anwar, 2022). Religiosity can be defined as an understanding relationship that individuals have towards belief or faith in a particular religion, thus encouraging individuals to avoid things prohibited in relation to a belief or religion (Fitriyani & Anwar, 2022). The internalization

of religious values within oneself is called being religious. This means adhering to religious teachings both in heart and verbally (Rosyidah & Lestari, 2013). An individual's religion can have a significant influence on their investment decisions (Baihaqqi & Prajawati, 2023). This influence varies depending on the beliefs and religious practices adopted by that individual. Research on the relationship between religiosity and investment decisions has produced diverse findings. Several studies by Fitriyani & Anwar (2022); Hussain et al. (2021); Baihaqqi & Prajawati (2023); Maksar et al. (2022); Mumtaz et al. (2022) show that religiosity can have a positive influence on investment decisions, especially in certain contexts. It's important to remember that its impact can vary between different individuals and religions.

Risk Tolerance moderates the influence of Herding Bias on Investment Decision
Based on the research findings from Tamara et al. (2022) it shows that herding bias has a significantly positive impact on an individual's investment decisions. Thus, someone with a herding bias tends to make investment decisions more quickly than other investors. Herding bias, which is the tendency to follow the majority or market trends without in-depth evaluation, can affect an investor's risk tolerance. Investors with high risk tolerance may be more capable of maintaining their independence in decision-making and are less influenced by herding behavior (Holly et al., 2022). Conversely, investors with low risk tolerance are likely to follow the majority to reduce uncertainty and feel more secure in making investment decisions (Holly et al., 2022).

Risk Tolerance moderates the influence of Overconfidence on Investment Decision
Risk tolerance is how ready someone is to take risks or uncertainties when making investment or financial decisions (Sudirman et al. 2023). Risk tolerance can play a role as a factor that can reduce the impact of overconfidence bias in investment decision-making. When someone has realistic risk tolerance, they tend to consider risks that align with their investment perspective, without being influenced by overconfidence bias (Sihombing & Prameswary, 2023). In line with several studies conducted by Soraya et al. (2023); Sudirman et al. (2023); Kasoga (2021), it is explained that risk tolerance can moderate overconfidence towards investment decisions.

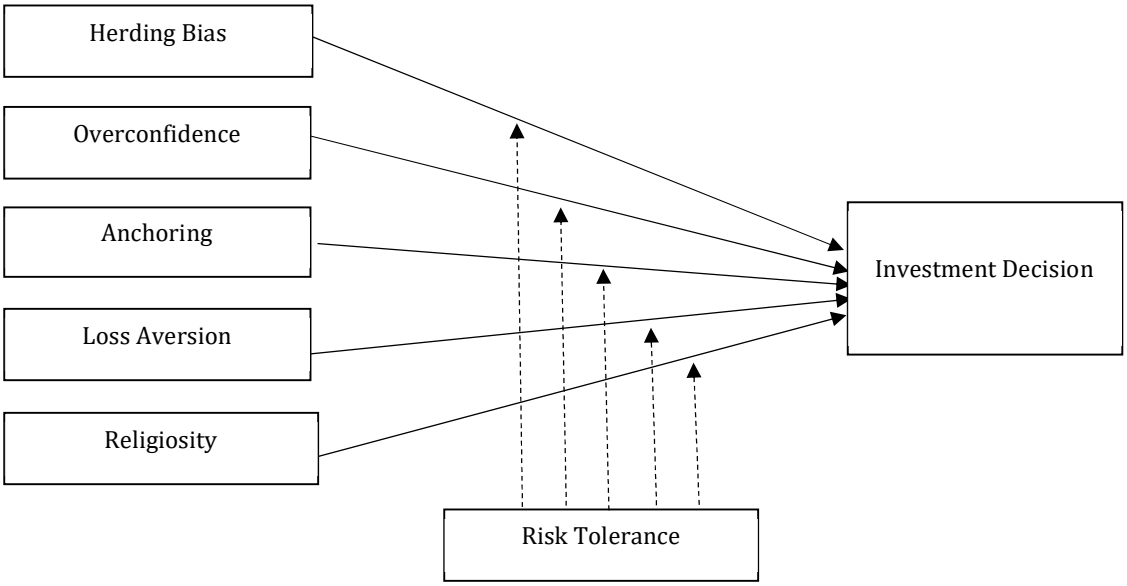
Risk Tolerance moderates the influence of Anchoring on Investment Decision
According to Rahma (2022), the theory of behavioral finance is based on several aspects, including emotions, traits, and preferences observed in each individual, so the low or high level of investment risk prediction will influence a person's investment decisions. Based on the research findings by Limgestu et al. (2023), it shows that sharia investors in Batam, Indonesia, are affected by the anchoring behavioral bias, which is reflected in their focus on the initial purchase price of an investment when making investment decisions. Risk tolerance and anchoring are two important factors in investment decision-making. In line with the research findings of Rahma (2022) dan Limgestu et al. (2023), it shows that the relationship between the two can influence how an investor evaluates, manages, and responds to risk in their investment portfolio. A person's level of risk tolerance can influence the extent to which they are attached to certain values or initial references in investment decision-making (Saraswati & Malang, n.d.).

Risk Tolerance moderates the influence of Loss Aversion on Investment Decision
According to the research by Gunawan & Wiyanto (2022), loss aversion bias has a positive and significant impact on financial behavior in long-term investment decision-

making in the capital market. Based on the research findings of Holly et al. (2022), there is a potential for greater risk tolerance behavior, which can make investment decisions by investors in Makassar City less rational. This emphasizes the importance of understanding psychological factors such as loss aversion in designing more effective investment strategies in the capital market. Investors with high risk tolerance may be better able to cope with the emotional impact of loss aversion. They might be more willing to accept fluctuations in investment value and view losses as part of the investment process (Rahma, 2022). On the other hand, investors with low risk tolerance may be more influenced by loss aversion. They tend to focus more on capital protection and feel more uncomfortable with potential losses (Holly et al., 2022).

Risk Tolerance moderates the influence of Religiosity on Investment Decision

The result of the research by Baihaqqi & Prajawati (2023) show that religiosity has a positive and significant impact on the investment decisions of students at the Faculty of Economics, UIN Maliki Malang. This means that the higher the level of religiosity among students, the better the investment decisions made religiously. A person's level of religiosity can influence their level of risk tolerance. Some religious beliefs may teach conservative principles in financial management, which can create a lower level of risk tolerance (Baihaqqi & Prajawati, 2023). Religious values and teachings can serve as a moderation of an individual's risk tolerance level. High religiosity may create a preference for safer or more conservative investments. Highly religious investors may be more inclined to choose investments that align with their religious beliefs (Maksar et al., 2022). This may include choosing financial instruments that are considered ethical or avoiding investments that are deemed immoral.



Source : Constructed by the authors for this study, 2024

Figure 1
Research Model

Hypothesis

This research proposes several hypotheses to examine the relationship between behavioral bias, religiosity, and risk tolerance on investment decisions. These hypotheses

are formulated to test the direct influence of psychological and demographic components on investment decisions, as well as the moderating role of risk tolerance in this relationship. This research also reviews the existing literature. This is the research hypothesis:

H_1: Herding bias has a significant positive effect on the investment decisions of investors in Batam City
H_2: Overconfidence has a significant positive effect on the investment decisions of investors in Batam City
H_3: Anchoring has a significant positive effect on the investment decisions of investors in Batam City
H_4: Loss aversion has a significant positive effect on the investment decisions of investors in Batam City
H_5: Religiosity has a significant positive effect on the investment decisions of investors in Batam City
H_6: Risk tolerance can moderate herding bias towards the investment decisions of investors in Batam City
H_7: Risk tolerance can moderate overconfidence towards the investment decisions of investors in Batam City
H_8: Risk tolerance can moderate anchoring towards the investment decisions of investors in Batam City
H_9: Risk tolerance can moderate loss aversion towards the investment decisions of investors in Batam City
H_{10}: Risk tolerance can moderate religiosity towards the investment decisions of investors in Batam City

METHOD

This research is a type of quantitative study, which means collecting and analyzing numerical data (Ali et al., 2022). This research analyzes independent variables (Herding bias, Overconfidence, Anchoring, Loss Aversion, Religiosity) against the dependent variable (Investment Decision) moderated by the variable (Risk Tolerance). The research subjects used are the community of investors in the city of Batam.

The sampling technique used is the snowball sampling technique, which is a research method where the initial sample is randomly selected, and then those respondents help the researcher find additional participants for the study (Lenaini, 2021). The snowball sampling method involves chain or multi-level sampling, where one respondent recommends the next respondent, and the process continues (Lenaini, 2021).

In this study, primary data type is used, which means data is collected from respondents through questionnaires. To analyze the data, the Partial Least Squares Structural Equation Modeling (PLS-SEM) is used (Yang et al., 2021). This was chosen because PLS-SEM is more flexible and can easily handle complex structural models.

Table 1 shows the list of questionnaires used in this study to operationalize each research variable. This table is important because it provides methodological transparency and shows that the research instruments have been adapted from credible previous studies. This table serves as an important foundation for testing the validity and reliability of the instrument and enables future research. This is because each variable construct, namely investment decisions, herding bias, overconfidence, anchoring, loss

aversion, religiosity, and risk resilience, is measured through several relevant and comprehensive indicators.

Table 1
Questionnaire List

Variable		Question	Source
Investment Decision	ID1	I have sufficient knowledge about investing in the capital market.	(Sudirman *et al*. 2023)
	ID2	I trust my instincts when making investment.	(Loris, 2020)
	ID3	Usually, I make investments that I believe are right for me.	
	ID4	I prioritize the return from the investment products I choose.	
	ID5	In my opinion, it is better to have a safe investment with low but guaranteed returns than to take risks for high returns.	
Herding Bias	HB1	My investment choices are influenced by other investors' choices in selecting stocks.	(Hossain & Siddiqua, 2022)
	HB2	My investment choices are influenced by the stock value choices of other investors.	
	HB3	My investment decisions are influenced by the buying and selling decisions of other investors.	
	HB4	I usually respond quickly to fluctuations in other investors' choices and observe their reactions to the stock market.	
Overconfidence	OV1	I feel more confident in my own investment perspective compared to others.	(Hossain & Siddiqua, 2022)
	OV2	I do not rely on others for investment decision-making.	
	OV3	I succeed in conditions where others fail.	
Anchoring	AN1	I have a target when buying or selling a stock.	(Loris, 2020)
	AN2	I am more confident in the stock analysis I made.	
	AN3	The stock analysis I made remains unchanged despite contradicting a famous analyst.	
	AN4	I choose stocks based on past performance.	

Loss Aversion	LA1	A significant loss in my investment is more important to me than losing a large profit (gain).	(Hossain & Siddiqua, 2022)
	LA2	The significant drop in the price of the stocks I invested in makes me feel anxious.	
	LA3	I will avoid increasing my investment when the market conditions are performing poorly.	
	LA4	I will not sell stocks that are experiencing a price drop, whereas I will sell stocks that are experiencing a price increase.	
Religiosity	RE1	My religious beliefs form the basis of my entire outlook on life in making decisions.	(Fauziah, 2019)
	RE2	I agree to choose investments that adhere to the correct principles in religion.	(Cantika, 2022)
	RE3	I feel at ease when choosing investments that align with my beliefs.	
	RE4	I choose investment because I want to gain blessings and rewards.	
Risk Tolerance	RT1	I do not invest in stocks because they are too risky.	*(*Sudirman *et al*. 2023)
	RT2	I want to make sure that my investment is safe.	
	RT3	I am ready to take the risk of incurring losses when there is an opportunity to generate profits.	
	RT4	If i want to improve my financial condition, then I must be brave enough to take financial risks.	

RESULT AND DISCUSSION

Respondent Demographics

The demographic results of the respondents are data obtained from 384 questionnaires that have been distributed according to the established sampling criteria. The results of the data were determined based on calculations using the Slovin formula (Majdina et al., 2024). The data consists of 186 males and 198 females.

The demographic characteristics of respondents in this study are summarized in Table 2, which depicts a comprehensive profile of 384 investors in Batam who served as the study sample.

Table 2
Respondent Demographics

Variable	Category	Frequency	Percentage
Gender	Male	186	48%
	Woman	198	52%
Age	<20	63	16%
	21-30	269	70%
	31-40	48	13%
	41-50	4	1%
	>51	0	0%
Last Education	Junior high school or equivalent	0	0%
	High school or equivalent	169	44%
	Bachelor's Degree (S1)	176	46%
	Magister (S2)	39	10%
Employment Status	Students	152	40%
	Private Employees	135	35%
	Entrepreneur	61	16%
	PNS/ASN	28	7%
	Others	8	2%
Your Investment Experience	<1 year	132	34%
	1-5 years	203	53%
	>5 years	49	13%
Investment Options	Stock	90	23%
	Stocks and Bonds	83	22%
	Bond	98	26%
	Mutual Funds	86	22%
	All types	27	7%

Source : Data Analyzed, 2024

Based on the data, it can be seen that the majority of respondents are aged 21-30 years, totaling 269 people or 70%, with the highest level of education being a bachelor's degree (S1) held by 176 people or 46%. This is in line with the average age of the respondents, which is the age at which they graduate with a bachelor's degree (S1). In the employment status data, the respondents were mostly students, totaling 152 people with a percentage of 40%. Additionally, regarding investment experience, the largest number of respondents were found to have 1-5 years of experience, totaling 203 people or 53%. There were also respondents with less than 1 year of experience, totaling 132 people or 34%. However, the smallest number of respondents had more than 5 years of experience, totaling 49 people or 13%. In the investment choice data, the majority of respondents invested in bonds, totaling 98 people or 26%, while the smallest number of respondents, 27 people or 7%, invested in all types.

Validity Test

Validity is defined as the accuracy of test results and the assessment of whether a scale measures the idea of what it is intended to measure (Amora, 2021).
The validity test determines how well the variable can measure what it is supposed to measure and how well the variable is able to produce accurate and relevant data related to the construct being studied (Guenther et al., 2023).

Table 3
Validity Test

Variable	Indicator	Convergent Validity			
		Outer Loadings	Result	AVE	Result
Investment Decision	ID1	0,878	Valid	0,628	Valid
	ID2	0,743			
	ID5	0,749			
Herding Bias	HB1	0,734	Valid	0,562	Valid
	HB2	0,732			
	HB3	0,745			
	HB4	0,785			
Overconfidence	OV1	0,861	Valid	0,738	Valid
	OV2	0,853			
	OV3	0,863			
Anchoring	AN1	0,737	Valid	0,649	Valid
	AN2	0,844			
	AN3	0,812			
	AN4	0,826			
Loss Aversion	LA1	0,860	Valid	0,715	Valid
	LA2	0,830			
Religiosity	RE1	0,831	Valid	0,706	Valid
	RE2	0,818			
	RE3	0,827			
	RE4	0,883			
Risk Tolerance	RT3	0,904	Valid	0,799	Valid
	RT4	0,884			

Source : Data Analyzed, 2024

The results of the validity test are an important part of the research process. Based on the results of the validity test in the Table 3, the outer loading and AVE values are above the minimum value, thus they can be considered valid. The variables include investment decision, herding bias, overconfidence, anchoring, loss aversion, religiosity, and risk tolerance.

Reliability Test

Reliability is a measure of the internal consistency of a test or scale that indicates how closely the items are connected within a group and how consistent the measurement results are when the same items are measured repeatedly with the same instrument (Dash & Paul, 2021).

The reliability test measures how consistent the measurement results are when the same statement or item is measured two or more times with the same measuring instrument (Dash & Paul, 2021).

Table 4
Reliability Test

Variable	Cronbach's Alpha	Composite Reliability	Result
Investment Decision	0,703	0,834	Reliable
Herding Bias	0,742	0,837	Reliable
Overconfidence	0,823	0,894	Reliable
Anchoring	0,819	0,881	Reliable
Loss Aversion	0,601	0,833	Reliable
Religiosity	0,861	0,906	Reliable
Risk Tolerance	0,749	0,888	Reliable

Source : Data Analyzed, 2024

The reliability test successfully demonstrated that the variable is considered to have an adequate level of consistency to measure the construct being studied. The reliability test must have a Cronbach's alpha value of more than 0.60 and a composite reliability value of more than 0.70. If the Cronbach's alpha value is more than 0.60 and the composite reliability value is more than 0.70, then the variable is considered reliable, as shown by the results in Table 4.

Discriminant Validity

For structural equation modeling, Fornell and Larcker suggest specific criteria to evaluate discriminant validity. This criterion assesses discriminant validity by comparing AVE with the squared correlations between constructs. Each construct must have a square root greater than the highest correlation with other constructs in the model (Dash & Paul, 2021).

Table 5
Discriminant Validity (Fornell-Larcker Criterion)

	AN	HB	ID	LA	OV	RE	RT
AN	0,806						
HB	0,560	0,749					
ID	0,593	0,535	0,792				
LA	0,534	0,395	0,440	0,845			
OV	0,696	0,573	0,549	0,355	0,859		
RE	0,477	0,335	0,468	0,377	0,435	0,840	
RT	0,494	0,383	0,522	0,345	0,439	0,404	0,894

Source : Data Analyzed, 2024

In Table 5, it can be seen that each construct has good discriminant validity.

Coefficient of Determination Test

To evaluate how well a statistical model explains and predicts outcomes, the coefficient of determination is used to measure the proportion of variance in the dependent variable explained by the independent variable. The R-squared value is displayed as a proportion measure, and the adjusted R-squared value is corrected to be an unbiased estimator and provides a more accurate measure of fit for the linear regression model (Russo & Stol, 2022).

Table 6
Coefficient of Determination (R square) Test

	R square	R square adjusted
Invesment Decision	0,504	0,489

Source : Data Analyzed, 2024

The test results in Table 6 show that the R square value is 0.504, indicating that the independent variables explain approximately 50.4% of the variance in the dependent variable. The adjusted R square value is 0.489, which adjusts the R square value based on the number of independent variables in the model to account for potential overfitting. This value indicates that after adjustment, the independent variables explain approximately 48.9% of the variance in the dependent variable.

Hypothesis Test

Hypothesis testing is a statistical procedure that uses the p-value to determine whether a sample estimate is significantly different from the hypothesized value. In hypothesis testing, the p-value is the probability of obtaining a test result at least as extreme as the actually observed result, assuming that the null hypothesis is true. In this approach, the calculated probability is used to determine whether there is evidence to reject the null hypothesis, which heavily relies on the p-value (Othman & Yusuff, 2022).

Table 7
Hypothesis Test

Variable	Coefficient	Standard Deviation	T statistics	P Values
HB -> ID	0,198	0,050	3,895	0,000
OV -> ID	0,146	0,053	2,767	0,006
AN -> ID	0,146	0,060	2,428	0,015
LA -> ID	0,108	0,052	2,080	0,038
RE -> ID	0,140	0,046	3,071	0,002
RT x HB -> ID	0,029	0,046	0,619	0,536
RT x OV -> ID	-0,082	0,048	1,660	0,097
RT x AN -> ID	0,056	0,064	0,813	0,417
RT x LA -> ID	0,026	0,046	0,593	0,553
RT x RE -> ID	-0,052	0,038	1,408	0,159

Source : Data Analyzed, 2024

The results of the first hypothesis test show that herding bias has a significantly positive impact on investment decisions, with a p-value of 0.000 and a coefficient of 0.198. Because of the tendency to follow the majority in investment decision-making, the reason for herding bias is very helpful in investment decision-making. Herding bias can influence perceptions of risk and return, and cause investors to tend to follow the general market behavior. This can lead investment decisions to tend to follow market trends without deep consideration, thereby potentially significantly affecting investment decisions. The results of this study are in line with Theressa & Armansyah (2022); Almansour et al. (2023); Lorenza & Wargenegara (2022); Qasim et al. (2019); Afriani & Halmawati (2019); Dhakal & Lamsal (2023).

The second hypothesis, namely Overconfidence towards Investment Decision, has significantly positive influence. This was indicated by a p-value of 0.006 and a

coefficient value of 0.146. With high self-confidence, a person may be more inclined to act on their beliefs, which can ultimately lead to better investment outcomes. Overconfident investors believe they have the ability, knowledge, and experience necessary to make the right investment decisions and have considered those options. Moreover, overconfidence can also help someone remain calm and not be influenced by market fluctuations that might trigger panic actions. These results are consistent with the research of Halim & Pamungkas (2023); Tifany & Pamungkas (2023); Hussain et al. (2021); Pinaring et al. (2023).

The test results on the third hypothesis show that Anchoring has a significant positive effect on Investment Decision. Based on Table 7, it can be seen that the p-value is 0.015 and the coefficient value is 0.146. Anchoring is the tendency to rely too heavily on initial information or a specific reference point in decision-making. Anchoring affects investors because, in situations of uncertainty and lack of information when making decisions, the initial information they have can provide a reasonable and general picture of what they should expect. This can lead investors to tend to set investment values or targets based on that initial information without considering other information. This is in line with the results of the research Raafifalah (2021); Badri & Putri, (2021); Marheni & Anmelrina (2021); Dhakal & Lamsal (2023); Robin & Angelina (2020); Handoyo et al. (2019).

The fourth hypothesis states that Loss Aversion has a significant positive effect on Investment Decision. With a p-value of 0.038 and a coefficient value of 0.108. It can be concluded that the fourth hypothesis is accepted. Loss aversion has a significantly positive effect on investment decisions because humans tend to feel more impacted by losses than by equivalent gains. This natural tendency can influence investment decisions by making individuals more cautious in taking risks. When faced with investment choices, the tendency to avoid losses can drive someone to choose a safer option that may be less profitable. Thus, loss aversion can influence an individual's investment behavior and can be an important factor in investment strategy. The results of this study are in line with Khan (2017); Elahi et al. (2023); Addinpujoartanto & Darmawan (2020); Rahman & Dewi (2023); Anwar et al. (2023); Hesniati & Dedy (2021).

The fifth hypothesis, namely Religiosity on Investment Decision, successfully has a significant positive effect. This is evidenced by a p-value of 0.002 and a coefficient value of 0.140. This research shows that individuals with a strong religious belief system often exhibit higher levels of trust and confidence in institutions and financial markets. This can lead to a greater willingness to engage in investment activities and take financial risks. Additionally, religious individuals may be more inclined to make long-term investment decisions, guided by their ethical and moral beliefs. These results are consistent with the research of Fitriyani & Anwar (2022); Hussain et al. (2021); Baihaqqi & Prajawati (2023); Maksar et al. (2022); Mumtaz et al. (2022).

Unlike the sixth hypothesis, Risk Tolerance does not have a significant influence in moderating Herding Bias on Investment Decision. This is evident in Table 7, which shows a p-value of 0.536 and a coefficient value of 0.029. Risk tolerance is unable to moderate between herding bias and investment decision because risk tolerance is more focused on an individual's comfort level in facing risk rather than on specific investment decisions. Herding bias tends to occur when investors follow the majority or group in making investment decisions, without deeply considering the risks involved. While risk tolerance only assesses the extent of risk an investor can bear, without considering the influence of herding bias on investment decisions.

The result of the seventh hypothesis is that Risk Tolerance does not have a significant effect in moderating Overconfidence on Investment Decision. Based on table 7, it shows a p-value of 0.097 and a coefficient value of -0.082. This is because overconfidence can make someone ignore the actual risks, especially when someone has excessive confidence in their own abilities. This causes someone to tend to ignore their actual risk tolerance level and to be overly confident in making investment decisions without considering the actual risks involved. Additionally, overconfidence can also lead someone to tend to choose riskier investment options without objectively considering the potential losses that may occur. Therefore, risk tolerance is unable to moderate overconfidence in investment decision-making because overconfidence tends to shift attention away from risk considerations, which should be the main focus in the investment decision-making process.

Based on the results in Table 7, it shows that Risk Tolerance moderates Anchoring on Investment Decision with a p-value of 0.417 and a coefficient value of 0.056. It can be concluded that in the eighth hypothesis, there is no significant effect in moderating Anchoring on Investment Decision. Although risk tolerance can influence how much someone tends to take risks in investments, anchoring still tends to affect investment decisions regardless of an individual's level of risk tolerance. Thus, it is important to recognize that risk tolerance cannot moderate the impact of anchoring on investment decisions.

The result of the ninth hypothesis, namely Risk Tolerance, does not have a significant effect in moderating Loss Aversion on Investment Decision. It can be seen from table 7 that the p-value is 0.553 and the coefficient is 0.026. This is supported by the fact that the tendency to feel disturbed by losses is greater than the satisfaction from gains, which can directly affect investment decision-making, even when someone has a high level of risk tolerance. This shows that loss aversion has a strong influence on investment decisions, even surpassing the impact of risk tolerance.

Based on the results in table 7, it shows that Risk Tolerance moderates Religiosity towards Investment Decision with a p-value of 0.159 and a coefficient value of -0.052. It can be concluded that the tenth hypothesis did not succeed in moderating. The research results show that a person's level of religiosity can influence their investment decisions, such as the tendency to choose investments that align with the religious principles they adhere to. However, in this context, risk tolerance does not play a role as a moderator. That means, even if someone has a high or low level of risk tolerance, their level of religiosity still influences their investment decisions without moderation from risk tolerance.

CONCLUSION AND SUGGESTIONS

The results of the research and data processing show that the independent variables, namely herding bias, overconfidence, anchoring, loss aversion, and religiosity, effectively influence the dependent variable of investment decisions. However, risk tolerance has not been proven to have a significant impact on the correlation between independent variables and investment decisions. However, it must be acknowledged that this study has limitations. The main limitation is the sample used. Investors who are investing in the city of Batam are the subjects of this research, so the results cannot be generalized to investors elsewhere in Indonesia or abroad.

The suggestions and recommendations from this research indicate that further studies should be conducted with a more representative sample of investors from other cities in Indonesia. Furthermore, it is recommended to re-evaluate the measurement of the

variables used to enhance the validity and reliability of the research. By addressing these weaknesses, future research is expected to provide deeper insights into the factors including psychological aspects such as mental accounting, availability bias, confirmation bias, and regret aversion; social factors such as family influence, media, culture, and investor communities; as well as economic and demographic factors such as financial literacy, income, economic conditions, investment experience, and geographical location. Understanding these factors is expected to improve the model's accuracy and deepen insights into investment decisions.

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