The Role of Locus of Control in Moderating the Effect of Behavioral Bias on Investment Decision Making

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Abstract

Making an investment decision involves deciding to take on additional income from an asset or assets in the hopes of earning a profit down the road. The purpose of this study is to present empirical evidence of how behavioral bias affects investors' decision-making while making investments, with the internal locus of control acting as a moderator. The 44,319 participants in this survey are all investors in the Denpasar area. Quota sampling was the procedure used to determine the sample. Using a questionnaire methodology, a survey method is employed to collect data. The information was gathered using a questionnaire methodology in a survey. The model of linear double regression equations used for the data analysis is called Moderated Regression Analysis (MRA), and it examines how moderation variables affect the relationship between independent and dependent variables. The populace was given questionnaires until 396 samples were gathered. The results of this study showed that decision-making about stock investments by investors is significantly impacted negatively by overconfidence bias, representativeness bias, anchoring bias, and herding bias. Additionally, the research shows that while the locus of control might increase the effect of herding on investor investment decisions, it can also lessen the influence of prejudice, representativity, and ancoring bias.

Keywords: Overconfidence Bias, Representativeness Bias, Anchoring Bias, Herding Bias, Locus of Control, Investment Decision

INTRODUCTION

Good economic growth is certainly the hope of all countries, including Indonesia. Various efforts are made to increase the rate of positive and sustainable economic growth in the midst of increasing global economic turmoil. Globalization, technological innovation, and intense business competition force companies to change their business practices (Putra & Ratnadi 2021; Purnama et al., 2023).

Investment is one of the main drivers of a country's economic growth. It can be seen from the increase in production capacity that can create new jobs, thus expanding employment opportunities. Although there are other influencing factors, creating a conducive investment climate is expected to attract the interest of most investors to invest their capital due to the convenience offered. In making economic decisions, business people need information about the company's financial condition and performance Suartana and Ariyanto (2018), as well as investing, of course, requires careful considerations to minimize the risks that will occur in the future.

In this study focuses on examining stock market investors stock market investors, of course, stock investors were chosen to be the object of research because stock investment is often considered more risky and more volatile than stock investment. stocks are often considered riskier and more volatile than mutual funds or bonds. High volatility can make investment decisions become more sensitive to psychological and emotional factors then supported by research conducted by Baker et. al., (2021).

Sourced from the Indonesian Central Securities Depository (KSEI), the Denpasar region ranks 1st with the highest level of stock investors. Denpasar was chosen as the object of research because it is the central government area as well as the operational area for production companies. Researchers believe that a high population is able to describe significant representation where if the highest number of investors certainly has a big influence in the market or has a certain tendency that affects the market as a whole.

The researcher applies the theory of financial behavior to assess investment decision-making, which is the primary emphasis of this investigation. The theory of financial behavior is used by academics to gauge investment decision making, which is the primary subject of this investigation. Naturally, this is directly tied to

the theory that explains how people can react to decisions they make about investment planning in an irrational or rational way. Therefore, it is indisputable that behavioral bias behavior is deeply ingrained in a person's soul and significantly influences each and every financial decision they make.

This behavioral bias can be categorized including the first, namely overconfidence bias, which indicates that investors have a high level of confidence and predictive information in making investment decisions, the second is representativeness bias where investors have perceptions of the past that can influence investment decisions to be taken so that they can have an impact on investment losses, the third is anchoring bias reflected in the behavior of investors who are unable to make investment decisions based on one information, then there is herding bias where investors have a perception of the past that can affect investment decisions. investment decisions based on only one information, then there is herding bias where this bias is commonly practiced by lay investors. this bias is commonly done by ordinary investors who tend to make decisions based on following groups or other people. decisions based on following groups or other people.

In understanding investment decisions, researchers use internal locus of control, where individuals tend to have belief in their own ability to determine events and outcomes in their lives. They feel that the actions, decisions, and efforts they make directly affect the results they get. Investors with this belief tend to realize that their ability absolutely determines their results.

This research is supported not only by the theoretical foundation that was employed, but also by the fact that there is research GAP research that displays the findings of earlier research. Among the studies mentioned is Rasheed et al. (2018) Representative prejudice and availability bias have a large and favorable impact on investors on the Pakistan Stock Exchange; yet, when it comes to making investment decisions, internal locus of control is powerless to mitigate this link, while overconfidence and anchoring bias had a significant impact on investment decisions, disposition and herding bias had no significant impact on those decisions, according to research by Puspawati and Yohanda (2022). According to research by Lather et al. (2020), internal locus of control is the primary cause of investor bias. Figure 1. shows the proposed research model in this study.
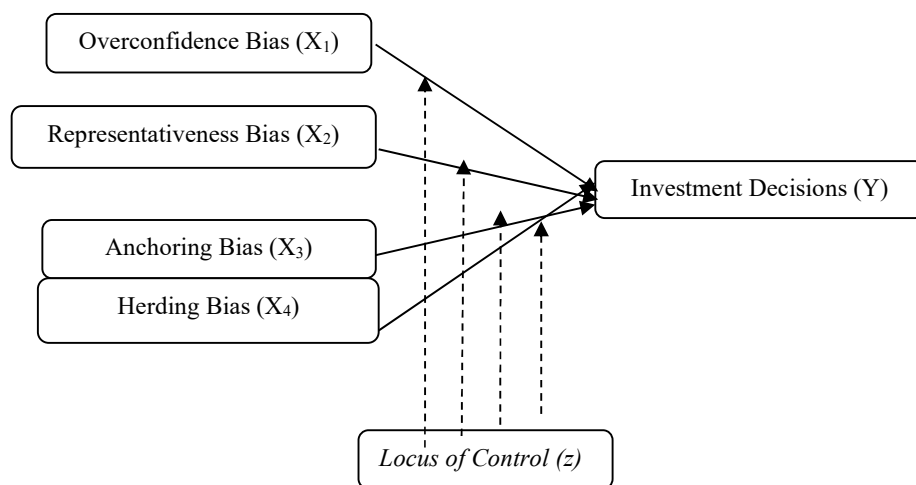

Figure 1. Research Model

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Research on the dynamics of overconfidence among Pakistani stock market investors was done by Rasheed et al. (2019) on 196 active investors in Sargodha, Lahore, and Islamabad. The findings show a strong correlation between investor decisions and overconfidence, and that this correlation is strongly tempered by locus of control, suggesting that biased conduct from specific personalities may be predictable. This shows that stock purchases and other excessive transactions made without thorough consideration make investors feel better and result in less optimum portfolios.

Rasyid et al. (2018) studied 43 employees of the PT. Pertamina (Persero) Padang branch who engage in investing activities to determine the impact of locus of control, income, and financial expertise on investment decisions. The outcomes The study's findings demonstrate how locus of control, financial literacy, and income all

have a big impact on investing decisions.

According to research by Sharen and Linawati (2022), behavioral bias has a substantial detrimental impact on stock investment decisions, as noted by Sartika and Humairo (2021). Decisions about investing in stocks are influenced by a strongly detrimental overconfidence bias.

H1: Overconfidence bias has a negative effect on investment decisions

Cuandra et al.'s research from 2021 suggests that investment decisions are significantly influenced by representative bias, which is consistent with Shah et al.'s (2018) finding that representativeness bias influences investment decisions in active investors who trade on the PSX.

H2: Representativeness bias has a negative effect on investment decisions

According to Shah et al. (2018), there is a negative correlation between anchoring bias and investing decisions. However, research by Puspawati and Yohanda (2022) showed statistically significant data suggesting that anchoring bias positively influences investment decisions.

H3: Anchoring bias has a negative effect on investment decisions

Herding bias was found to have a detrimental impact on investment decisions by Rajeshwaran (2020), whereas research by Sabilla and Pertiwi (2021) revealed that herding bias had a favorable impact on investment decisions.

H4: Herding bias has a negative effect on investment decisions

According to research by Rasheed et al. (2019), investor decisions are significantly influenced by overconfidence bias, which is modulated by locus of control. Consistent with previous research, the findings of Lama's study from 2022 indicate that locus of control acts as a moderator in the association between investment and overconfidence bias.

H5: Locus of control weakens the effect of Overconfidence Bias on investment decisions.

Research by Rasheed et al. (2018) demonstrates that locus of control is ineffective at mitigating the effects of representational bias on investment decisions. Agustin and Lysion's (2021) findings, which also show that locus of control cannot mitigate the impact of representational bias on investment decisions, corroborate these findings.

H6: Locus of control weakens the effect of Representativeness Bias on investment decisions.

Research by Rasyid et al. (2018) revealed that locus of control influences investing decisions, whereas Sudani (2022) demonstrates that anchoring bias does not have a favorable affect. The presence of GAP research, as demonstrated by studies by Dangol and Manandhar and Sudani and Rasyid, indicates that locus of control functions as a mediator between the impact of anchoring bias and investment decisions.

H7: Locus of control weakens the effect of Anchoring Bias on investment decisions.

Lama (2022) discovered results indicating the internal locus of control can reduce herding-influenced investment decisions. study by Saputro and Wikartika (2023) contradicts this, indicating that locus of control influences investment decisions while study by Rasyid et al. (2018) indicates that herding bias has no effect. The presence of GAP research, as demonstrated by studies by Lama and Saputro and Rasyid, indicates that locus of control functions as a moderator between the impact of herding bias and investing decisions.

H8: Locus of control weakens the effect of Herding Bias on investment decisions.

METHOD

Based on KSEI statistics, the population of interest in this study consists of 44,319 stock exchange shareholders in the Denpasar Region. This study used the quota sampling approach in conjunction with a non-probability sampling strategy. The Slovin formula is used in this study's sample to collect data from 396 investors.

RESULT AND DISCUSSION

Validity Testing

Table 1. Validity Test Results

Variable	Correlation coefficient	Sig. (2-tailed)	Description
Investment Decisions (Y)	1	0,000	Valid
Overconfidence Bias (X_1)	1	0,000	Valid
Representativeness Bias (X_2)	1	0,000	Valid
Anchoring Bias (X_3)	1	0,000	Valid
Herding Bias (X_4)	1	0,000	Valid
Locus of Control (Z)	1	0,000	Valid

Data Proceed. 2024

The correlation coefficient value between the total score of all statement questions and the variables Overconfidence Bias, Representativeness Bias, Anchoring Bias, Herding Bias, Locus of Control, and investment decisions is larger than 0.30 with a significance level of less than 0.05. This demonstrates that the research instrument's statement items are reliable and appropriate for usage as such.

Reliability Testing

Table 2. Reliability Test Results

Variable	Cronbach's Alpha	Description
Overconfidence Bias (X_1)	0,791	Reliable
Representativeness Bias (X_2)	0,711	Reliable
Anchoring Bias (X_3)	0,800	Reliable
Herding Bias (X_4)	0,874	Reliable
Keputusan investasi (Y)	0,871	Reliable
Locus of Control (Z)	0,910	Reliable

Data Proceed. 2024

Every research tool has a coefficient of Cronbach's Alpha greater than 0.70. Therefore, it can be said that every variable satisfies the dependability standards and can be used for study.
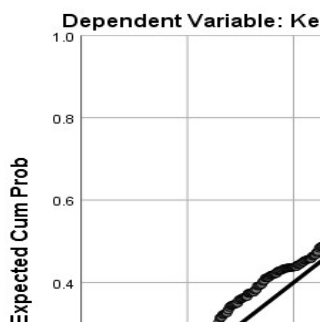
Normality Test

Figure 2. Normality Test Results

It appears from Figure 2 above that the data is normally distributed because the p plot graph displays the points dispersed along the main diagonal line.

Multicollinearity Test

Table 3. Multicollinearity Test Results

Variable	*Tolerance*	VIF	Description
Overconfidence Bias (X_1)	0,652	1,533	No Multicollinearity
Representativeness Bias (X_2)	0,432	2,314	No Multicollinearity
Anchoring Bias (X_3)	0,427	2,344	No Multicollinearity
Herding Bias (X_4)	0,542	1,845	No Multicollinearity
Locus of control (Z)	0,560	1,785	No Multicollinearity

Data Proceed. 2024

The regression equation model is free from multicollinearity if the tolerance and VIF values of the Overconfidence Bias, Representativeness Bias, Anchoring Bias, Herding Bias, and Locus of Control variables have values more than 10% or 0.1 and the VIF values are fewer than 10.

Heteroscedasticity Test

Table 4. Heteroscedasticity Test Results

Variable	Significance	Description
Overconfidence Bias (X1)	0,269	No Heteroscedasticity
Representativeness Bias (X2)	0,805	No Heteroscedasticity
Anchoring Bias (X3)	0,235	No Heteroscedasticity
Herding Bias (X4)	0,350	No Heteroscedasticity
Locus of Control (Z)	0,288	No Heteroscedasticity
X1.Z	0,192	No Heteroscedasticity
X2.Z	0,834	No Heteroscedasticity
X3.Z	0,310	No Heteroscedasticity
X4.Z	0,557	No Heteroscedasticity

Data Proceed. 2024

The variables locus of control, investment decisions, herding bias, anchoring bias, overconfidence bias, representativeness bias, and locus of control have values greater than 0.05, indicating that there is no relationship between the independent variables and the absolute residual, preventing heteroscedasticity symptoms from appearing in the model.

Moderated Regression Analysis Test (MRA)

Table 5. Moderated Regression Analysis Test Results

	Coefficients^a				
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	48,941	7,182		6,815	0,000
Overconfidence Bias (X1)	-0,496	0,120	-0,557	-4,115	0,000
Representativeness Bias (X2)	-0,708	0,348	-0,435	-2,033	0,043
Anchoring Bias (X3)	-0,723	0,235	-0,641	-3,075	0,002
Herding Bias (X4)	-0,332	0,042	-0,417	-7,949	0,000
Locus of Control (Z)	-0,605	0,227	-0,867	-2,665	0,008
X1.Z	0,014	0,004	0,675	3,434	0,001
X2.Z	0,027	0,011	0,435	2,345	0,020
X3.Z	0,026	0,008	1,094	3,312	0,001
X4.Z	-0,031	0,002	-1,554	-15,014	0,000

Data Proceed. 2024

Regression coefficient value of -0.496, t value of -4.115, and significance value of 0.000 were found based on the analysis of the impact of Overconfidence Bias on investing decisions. It is deemed to have a significance value of 0.000<0.05 (H1). According to this finding, investing decisions are significantly and negatively impacted by overconfidence bias. Likewise, as the sig value is less than 0.005, H2, H3, H4, H5, H6, and H7 are approved. But since the sig value is greater than 0.005, H8 is refused. Internal locus of control can mitigate the detrimental impact of behavioral biases on investing decisions, with the exception of herding bias, wherein locus

of control is incapable of mitigating the affect.

CONCLUSION

All behavioral biases significantly influence retrieval investment decisions by stock investors in a negative direction. The bias inherent in investors is certainly able to influence investors in determining their decisions. Of course, this bias has quite a bad influence so that investors often make irrational decisions. With the locus of control that investors have, it can weaken the influence of bias so that the decisions taken are closer to rational.

For stock exchange investors, especially those in the region Denpasar, based on the research results, is expected to become a consideration to avoid irrational behavior. Investors can increase the diversification of their stock portfolio before selling or buying shares or can consult with professionals. These methods can be used to prevent external factors, especially behavioral biases, which can trigger unreasonable investment decisions and the risk of loss

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