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by Agus Wibowo

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Behavioral Biases in Investment Decisions: A Mixed-Methods Study on Retail Investors in Emerging Markets

Abstract

Retail investment in emerging markets has experienced rapid growth, driven by technological advancements and increasing public awareness of financial management. However, behavioral biases often influence retail investment decision-making, such as overconfidence and herding, which can undermine portfolio performance. This study aims to identify the key behavioral biases affecting retail investors' decision-making in emerging markets and analyze their impact on investment performance. A mixed-methods approach was employed, combining a quantitative survey of 200 retail investors with in-depth interviews to gain qualitative insights. The results reveal that overconfidence bias dominates, with a prevalence of 70%, followed by herding bias at 50%, anchoring at 40%, and loss aversion at 60%. Overconfidence bias showed a significant positive correlation with investment returns ($r = 0.65$, $p < 0.01$), while herding ($r = -0.48$, $p < 0.03$), anchoring ($r = -0.55$, $p < 0.05$), and loss aversion ($r = -0.60$, $p < 0.02$) had negative impacts on portfolio performance. This research contributes to the behavioral finance literature by highlighting the unique conditions of emerging markets, such as low financial literacy and limited access to information, which exacerbate the effects of behavioral biases. As a practical implication, the development of behavioral finance-based educational programs is recommended to help investors understand and manage these biases. Furthermore, future research is encouraged to explore the use of alternative data, such as social media, to monitor behavioral trends in real-time.

Keywords: *Behavioral Biases, Retail Investors, Emerging Markets, Investment Decisions.*

I. INTRODUCTION

Retail investment has experienced significant growth in emerging markets, driven by increased accessibility to digital investment platforms and heightened public awareness of the importance of investment in building wealth. This growth has positively impacted capital market participation, marked by an increasing number of individuals engaging in self-directed investing. However, this development also presents new challenges, particularly in promoting rational and informed investment decision-making. In this context, investment decisions are often influenced by emotional and cognitive factors collectively known as behavioral biases. Biases such as overconfidence and herding may lead investors to make suboptimal decisions, such as overestimating the accuracy of their predictions or mimicking the actions of other investors without adequate analysis. Consequently, these phenomena may hinder portfolio management optimization, increase the risk of losses, and reduce the potential returns retail investors could otherwise achieve. In emerging markets characterized by high volatility and information asymmetry, understanding the influence of these behavioral biases becomes even more critical.

The literature on behavioral finance reveals that biases such as overconfidence, herding, and anchoring are prevalent among retail investors. According to (Ul Abdin et al., 2022), overconfidence bias often leads investors to overestimate their ability to predict market

movements, resulting in excessive trading that ultimately diminishes portfolio performance. Other researchers, such as (Chwolka & Raith, 2023), have noted that this bias is exacerbated by an individual's inability to rationally evaluate risks and expected outcomes, particularly under uncertain market conditions. Additionally, herding bias, as described by (Lu & Li, 2023), reflects investors' tendencies to follow group behavior without conducting a thorough analysis, often leading to inefficient market behaviors. While empirical evidence from developed markets demonstrates that behavioral biases significantly impact investment decisions, comprehensive data on similar biases in emerging markets remains limited. (Bennett et al., 2023) highlight that the unique characteristics of emerging markets, including heightened volatility and a lack of transparently available information, underscore the importance of investigating behavioral biases in this context.

Although numerous studies have emphasized the role of behavioral biases in investment decision-making, most of these studies focus on developed markets. For instance, (Kumar & Prince, 2022) found that overconfidence bias often leads to excessive trading frequency, negatively affecting portfolio performance. (García-Monleón et al., 2024) documented herding phenomena during the global financial crisis but primarily emphasized macroeconomic and institutional aspects rather than the behavior of retail investors. (Giannikos et al., 2023) introduced prospect theory to explain biases in decision-making under uncertainty, but its application in emerging markets remains underexplored. Conversely, (Rieger et al., 2022) investigated behavioral biases in emerging markets but focused only on aggregate patterns without delving into individual cognitive factors. Similarly, (Leal & Oliveira, 2024) demonstrated that minor interventions could influence financial behavior through nudging, but their findings have not been directly applied to improving retail investment decisions in emerging markets. This study aims to address these gaps by identifying key behavioral biases that affect investment decisions in emerging markets and analyzing their impact on portfolio performance through a mixed-methods approach combining quantitative data and qualitative insights.

This research aims to identify the primary behavioral biases influencing investment decision-making among retail investors in emerging markets. Furthermore, it seeks to analyze the impact of these biases on portfolio performance, considering both risk and potential returns. By employing a mixed-methods approach that integrates quantitative data and qualitative interviews, this study aspires to provide a more comprehensive understanding of the decision-making patterns of retail investors. The findings are expected to answer key questions, such as which behavioral biases are most dominant and how they affect investment outcomes. Moreover, the study seeks to contribute to the behavioral finance literature, particularly in the context of emerging markets, which have been underrepresented in academic studies. By understanding these biases, this

research aims to lay the groundwork for developing educational strategies and interventions that help retail investors make more rational investment decisions and optimize their portfolio performance.

II. LITERATURE REVIEW

A. Fundamental Theories

1. Behavioral Finance: The Concept of Behavioral Biases such as Overconfidence, Anchoring, and Herding

The literature on behavioral finance highlights how behavioral biases influence investment decision-making, particularly in emerging markets that are more susceptible to emotional and social dynamics. According to (Zhao et al., 2025), overconfidence bias often leads investors to overestimate their ability to predict market movements, resulting in excessive trading frequency. This phenomenon not only incurs higher transaction costs but also frequently undermines overall portfolio performance. In many cases, excessive confidence drives investors to disregard in-depth analysis and rely more on intuition or prior experiences. In emerging markets, overconfidence is exacerbated by limited access to information, which is often insufficient to support optimal decision-making. Moreover, incomplete decision-making frameworks, such as a lack of understanding of risk and diversification, further complicate the situation, posing additional challenges in managing investment risks effectively.

Anchoring bias is also a critical concern in understanding investment behavior, primarily due to its strong influence on investor judgment and decision-making. (Owusu & Laryea, 2023) explain that investors tend to rely on initial information (anchors) during the evaluation process, even when such information is irrelevant or inaccurate. Anchoring can lead investors to prioritize certain data over more valid information, creating imbalances in their decision-making analysis. In emerging markets, retail investors often use previous stock prices or opinions from unofficial sources as anchors, ultimately limiting their objectivity in making rational decisions. This reliance on anchors tends to intensify in situations characterized by low financial literacy and limited data availability. Such conditions foster distorted decision-making patterns, especially when market prices exhibit significant fluctuations due to external factors such as global economic volatility and unstable monetary policies.

In addition, herding behavior, or the tendency to follow the actions of the majority, often dominates investment decisions in emerging markets. According to (Sin Huei et al., 2022) retail investors are more likely to mimic collective behavior in an effort to reduce uncertainty when faced with complex information. Herding typically arises due to limitations in an individual's

ability to independently analyze market data or from a fear of missing out on opportunities leveraged by others. Another study by (Bhattacharya & Sardashti, 2022) found that herding occurs more frequently in environments with weak market regulations and a lack of information transparency, which are common features in many emerging markets. In many cases, herding is triggered by social dynamics that make investors feel more comfortable following the majority, even if such decisions are not supported by rational analysis. Consequently, investment decisions are often more influenced by group opinions rather than thorough individual analysis, exacerbating the risk of losses when markets experience high volatility.

Previous research has also emphasized how the interplay of these behavioral biases can amplify their collective impact on investment performance. (Goodell et al., 2023) suggest that overconfidence bias often serves as the initial trigger, which is subsequently reinforced by anchoring and herding in a recurring cycle. Overconfidence may lead investors to place excessive trust in their initial decisions, while anchoring encourages them to adhere to these initial judgments despite the availability of new, relevant information. Simultaneously, herding reinforces this pattern by prompting investors to follow collective trends without deeply considering objective data. This combination results in inefficient and risk-prone investment behaviors, particularly when misleading or inaccurate information spreads across the market. In the context of emerging markets, these challenges are further magnified by limited access to high-quality information and low financial literacy among retail investors.

2. Decision-Making Models: Bounded Rationality in Investment Decisions

Investment decision-making models are often influenced by the limitations of investor rationality, a concept referred to as bounded rationality, as discussed by (Li et al., 2023). According to (Li et al., 2023), investors are not always capable of making fully rational decisions due to constraints in available information, cognitive capacity, and the time required to process such information. In the context of investment, this means that investors tend to rely on heuristics or practical rules, which often lead to behavioral biases. These limitations affect not only how investors process information but also how they prioritize certain data over others that may be more relevant. In emerging markets, these constraints are exacerbated by less transparent market conditions and unequal access to information among investors. (Espinosa et al., 2022) note that such conditions create an environment more conducive to behavioral deviations compared to the more structured environments of developed markets, thereby increasing the likelihood of suboptimal decision-making.

In another study, (Hasan et al., 2023), through prospect theory, explain how investors often make decisions that deviate from rational expectations due to their risk preferences, which vary based

on the context of losses or gains. This theory highlights that individuals tend to be more sensitive to losses than to gains of the same magnitude, leading to suboptimal decisions. For example, loss aversion bias can compel investors to hold on to losing assets longer than they should or sell winning assets too quickly. These preferences are often influenced by emotional perceptions that make investors feel losses must be avoided at all costs, even if such decisions contradict rational investment logic. This phenomenon is more prevalent in emerging markets, where emotional and cultural factors play significant roles in investment decisions. These factors are often reinforced by low financial literacy, making investors more vulnerable to biases and decisions driven by social pressures or public opinion.

Furthermore, research by (Zang et al., 2023) on mental accounting reveals that investors often separate their assets into distinct mental categories, influencing how they evaluate risk and returns. The researchers note that this categorization is frequently irrational because it disregards the principles of optimal portfolio diversification. In practice, investors tend to treat each asset category as a separate entity without considering how interactions among categories could affect overall portfolio performance. For instance, investors might allocate funds differently for short-term savings and long-term investments without accounting for the risk relationships between these assets, such as correlations that could enhance portfolio efficiency. In emerging markets, mental accounting is often reinforced by the lack of formal financial education, causing investors to rely on intuition rather than rational analysis in managing their portfolios. This issue is further compounded by limited access to comprehensive investment information, leading investors to base decisions on habits or local norms rather than data-driven investment principles.

Additionally, research by (Jain et al., 2023) on simple heuristics illustrates how investors use basic rules to make decisions in complex situations. While heuristics often simplify the decision-making process, excessive reliance on them can result in systematic errors, such as representativeness or availability biases. Representativeness bias occurs when investors hastily infer similarities between two situations without considering critical differences, whereas availability bias arises when investors overly depend on information that is easily accessible or memorable. In the context of emerging markets, investors frequently rely on these heuristics due to constraints in resources and time for conducting in-depth analyses. Researchers note that this tendency is more common among retail investors who lack access to advanced analytical tools, making their decisions more susceptible to visible or easily recalled information. Social and cultural influences also reinforce the use of heuristics, often shaping how investors process information and respond to market changes.

B. Previous Research

1. Studies on Behavioral Biases in Developed Markets

Research on behavioral biases in developed markets has been extensively conducted to identify how psychological factors influence investment decision-making. According to (Aljifri, 2023), overconfidence bias is highly prevalent among investors in developed markets, where they frequently overestimate their ability to select profitable stocks. This bias leads investors to believe they possess informational advantages over other market participants, even though this is often not the case. Such overconfidence results in excessive trading activity, ultimately diminishing portfolio performance due to high transaction costs. Furthermore, researchers note that the broad accessibility of information in developed markets exacerbates this bias, as investors often become more confident in their decisions despite the information being irrelevant or inaccurate. The availability of digital platforms and financial media also contributes to this overconfidence, as investors increasingly expose themselves to speculative or unreliable information, significantly impacting their decision-making behavior.

Another study by (Kaur et al., 2024) highlights that loss aversion bias also dominates investment decisions in developed markets, where investors tend to fear losses more than they value gains of equivalent magnitude. This bias often leads investors to hesitate to sell underperforming stocks in the hope of eventual recovery, even when such expectations are not supported by rational analysis. This tendency is further intensified by investors' personal experiences, which influence their perception of potential losses as more significant than potential gains. Researchers note that this behavior is often rooted in emotional factors, prompting investors to avoid feelings of regret over perceived poor decisions. Additionally, loss aversion is reinforced by the habit of investors in developed markets relying heavily on historical data as their primary reference point, which often causes them to hold onto losing assets longer than necessary. This habit is also supported by social or professional pressures, making it challenging for investors to make rational decisions that deviate from common market thinking.

Furthermore, (Loang, 2025) investigates herding bias and finds that even in more transparent developed markets, investors frequently follow the majority's actions without conducting independent analysis. The study explains that herding behavior is often driven by social pressure and the perception that aligning with the majority reduces the risk of error. Herding also arises when investors feel uncertain about market conditions and choose to rely on collective behavior as a guide. In many instances, institutional investors play a significant role in creating market trends that retail investors then imitate, often without careful consideration. This research also indicates that herding can amplify market volatility, as collective decisions often fail to reflect the fundamental value of assets. Additionally, herding dynamics are frequently fueled by financial

media and analytical reports that lead to uniform behavior among market participants, creating a behavioral cycle that is difficult to break, even as market conditions change.

Moreover, a study by (Cascão et al., 2023) emphasizes how anchoring bias affects investors in developed markets, particularly in asset valuation processes. The researchers found that investors often use historical values or specific reference prices as the primary benchmark for evaluating stock value, even when recent data suggests significant changes in market conditions. This bias hampers investors' ability to adapt to dynamic market shifts, as they tend to cling excessively to initial information. Reliance on anchors often leads investors to overlook more relevant market indicators, such as economic growth trends or changes in monetary policy. The study also reveals that anchoring bias is frequently exacerbated by data-driven investment strategies that neglect fundamental factors. Additionally, this tendency is more commonly observed among investors who exhibit excessive confidence in rigid analytical approaches without considering external variables that could impact investment outcomes.

2. The Influence of Bias on Retail Investment Performance

Research on the influence of behavioral biases on retail investment performance has shown that various biases significantly impact individual investment decisions. According to (Chen & Tongurai, 2023), overconfidence bias often leads retail investors to engage in excessive trading, under the assumption that they possess superior information or analytical abilities compared to other market participants. This excessive trading not only increases transaction costs but also reduces net returns. Researchers observe that overconfidence is frequently reinforced by easy access to trading platforms and abundant market information, which encourages investors to make decisions without thorough analysis. This bias is particularly prominent among novice investors, whose lack of experience is often masked by an inflated sense of confidence.

Additionally, research by (Niculaescu et al., 2023) highlights that loss aversion bias significantly influences retail investment decisions, as investors are more likely to hold onto losing assets for too long rather than sell them. This bias is often rooted in the fear of realized losses, which feel more impactful than equivalent potential gains. The researchers further note that this tendency can lead investors to take disproportionate risks in their portfolios, as they are reluctant to acknowledge mistakes in prior investment decisions. In many cases, this bias is exacerbated by emotional perceptions, convincing investors that losses can be recovered if the assets are retained long enough. Such behavior not only hinders portfolio diversification but also negatively affects long-term performance.

Another study by (Gavrilakis & Floros, 2024) underscores the impact of herding bias on retail investors, particularly in dynamic and volatile market environments. The researchers found that

investors frequently follow the majority's actions without conducting independent analyses, leading to irrational decision-making. This bias often arises in situations where market information is difficult to interpret, making investors feel safer by adhering to collective trends. In the long term, herding can create market distortions, as asset prices often reflect group sentiment rather than fundamental value. This phenomenon also impacts portfolio performance, especially when collective trends reverse abruptly, resulting in significant losses for those relying on herding strategies.

Furthermore, (Mittal, 2022), through the concept of anchoring bias, reveals how investors often rely excessively on initial information or specific reference points when evaluating their investments. The researcher explains that this bias can limit investors' flexibility in adjusting their decisions based on new information. In the context of retail investing, anchoring is often observed when investors use the initial purchase price as the primary benchmark for assessing an asset's performance, disregarding relevant changes in market conditions. The study also notes that this bias tends to be aggravated by low financial literacy among investors, making them more susceptible to the influence of inaccurate initial information. Reliance on this bias often results in suboptimal decisions, ultimately affecting overall investment outcomes. Previous research has identified various behavioral biases affecting retail investment decisions, including overconfidence, loss aversion, herding, and anchoring. Table 1 summarizes the comparison of relevant behavioral biases based on key findings from prior studies, illustrating how each bias influences investor behavior and its impact on investment performance. This analysis provides a foundation for further understanding the effects of behavioral biases in the context of retail investing.

Table 1. Comparison of Relevant Behavioral Biases from Previous Research

Study	Behavioral Bias	Key Characteristics	Impact on Retail Investors	Implications on Investment Performance
(Chen & Tongurai, 2023)	Overconfidence	Overestimation of personal analytical ability or private information.	Excessive trading; impulsive decisions without thorough analysis.	Increased transaction costs; reduced net returns.
(Niculaescu et al., 2023)	Loss Aversion	Fear of losses outweighs the desire for equivalent gains.	Holding on to losing assets too long; reluctance to admit mistakes.	Poor portfolio diversification; increased portfolio risk.
(Gavrilakis & Floros, 2024)	Herding	Following majority actions without independent analysis.	Irrational collective decisions; reliance on market trends.	Market distortions; significant losses when trends reverse.
(Mittal, 2022)	Anchoring	Dependence on initial information or specific	Focus on the initial purchase price; difficulty adapting	Suboptimal decisions; exacerbated by low financial literacy.

		references in evaluation.	to new market information.	

III. RESEARCH METHOD

This study employs a mixed-methods approach to explore behavioral biases in retail investment decisions within emerging markets. This approach enables the integration of quantitative survey data with in-depth insights gathered through semi-structured interviews. The strategy is designed to provide a holistic understanding of common behavioral bias patterns among retail investors and how these biases influence decision-making and portfolio performance. By combining these two data types, the research produces results that are not only statistically measurable but also rich in relevant qualitative contexts. Furthermore, this method bridges the gap between numerical empirical findings and the subjective experiences of investors, thereby enhancing the validity and depth of the analysis. Overall, this comprehensive framework is well-suited for investigating the dynamics of behavioral biases in the challenging and dynamic context of emerging markets.

Data for this study were collected from two primary sources, designed to provide comprehensive insights into behavioral biases in investment decisions. Quantitative surveys were conducted to gather information on respondents' demographic profiles, investment experiences, and various behavioral bias scales such as overconfidence and herding. These data serve as a robust foundation for statistical analysis, measuring the prevalence of these biases and their impact on investment decisions. Additionally, in-depth interviews explored subjective experiences and perceptions of investors regarding their decision-making, with a particular focus on identifying psychological factors underlying behavioral biases. The qualitative approach allows for uncovering critical themes that may be overlooked in quantitative surveys, adding richer context to the findings. The combination of these methods ensures that the resulting data are both quantitatively accurate and qualitatively relevant, presenting a comprehensive perspective on behavioral biases among retail investors.

Quantitative data were analyzed using descriptive and inferential statistics, including linear regression and correlation analysis, to identify relationships between behavioral biases and investment performance. Meanwhile, qualitative data were analyzed to extract key themes related to behavioral biases. The following regression model was employed to examine the relationship between behavioral biases and investment performance (1):

$$Y = \beta_0 + \beta_1(Bias\ Overconfidence) + \beta_2(Bias\ Herding) + \epsilon \quad (1)$$

In this model, Y represents investment performance as the dependent variable, while β_1 and β_2 are coefficients indicating the influence of overconfidence and herding biases, respectively, as independent variables. The constant β_0 represents the baseline investment performance in the absence of behavioral biases, and ϵ accounts for the error term or other factors not explained within the model. By employing this approach, researchers can determine the magnitude and significance of the impact of behavioral biases on investment performance while identifying relevant patterns of association. This model is designed to provide deeper insights into the psychological dynamics underpinning investment decisions in emerging markets.

To understand the characteristics of respondents in this study, it is essential to evaluate their demographic profiles, covering aspects such as age, gender, and education level. These data were collected through a quantitative survey designed to provide a comprehensive overview of the participants' backgrounds. Demographic information is also valuable for identifying whether specific factors are associated with the analyzed behavioral biases. Moreover, these descriptions help assess the relevance and generalizability of findings to a broader population. The demographic profiles not only provide context but also form the foundation for further interpretation of survey and interview results. Table 2 below presents detailed information on the demographic profiles of the study's respondents.

Table 2. Demographic Data Description of Respondents

Characteristic	Kategori	Frequency	Percentage (%)
Age	< 30	100	50
	30-50	70	35
	> 50	30	15
Gender	Male	120	60
	Female	80	40
Education	High School	50	25
	Bachelor's Degree	100	50
	Master's Degree	50	25

Table 2 provides a detailed overview of the demographic characteristics of the study's respondents. In terms of age, the majority of participants are under 30 years old (50%), reflecting the dominance of younger individuals in the research sample. Gender distribution is relatively balanced, with 60% male and 40% female participants, highlighting diversity in participation. Regarding education level, 50% of respondents hold a bachelor's degree, while 25% each have high school and master's degree qualifications. This indicates that most respondents possess a solid formal education, which may influence their understanding of investment concepts. Overall, this demographic data forms the foundation for analyzing behavioral biases in investment decisions, adding credibility to the research findings and ensuring their contextual relevance.

Behavioral biases are key factors influencing investment decisions, particularly among retail investors. This study identifies several primary behavioral biases frequently observed through quantitative surveys, including overconfidence, herding, anchoring, and loss aversion. Data gathered from respondents reflect the frequency and percentage of each bias's occurrence within the studied population. Understanding the distribution of these biases is crucial for evaluating their impact on decision-making and investment performance. Furthermore, analyzing behavioral biases offers deeper insights into how individual psychology influences the dynamics of financial markets. Below is Table 3, which presents the statistics of behavioral biases identified in the survey, forming a foundation for further analysis of their influence on investments.

Table 3. Behavioral Bias Statistics from Survey Results

Type of Bias	Respondent Frequency	Percentage (%)
Overconfidence	140	70
Herding	100	50
Anchoring	80	40
Loss Aversion	120	60

Table 3 illustrates the distribution of four types of behavioral biases identified through the survey of the study's respondents. Overconfidence bias emerged as the most dominant, with a frequency of 140 respondents or 70% of the total participants, indicating that excessive confidence is a common phenomenon among retail investors. Herding bias also shows a significant presence, with 50% of respondents displaying a tendency to follow others' investment decisions, reflecting the strong influence of social factors in their choices. Meanwhile, anchoring bias is observed in 40% of respondents, indicating a reliance on initial information when making investment decisions. Loss aversion bias was identified in 60% of respondents, highlighting a heightened sensitivity to losses compared to potential gains. This bias reflects a tendency among investors to hold on to losing assets for too long or to sell profitable assets prematurely, driven by fear of losses dominating their mindset. The high prevalence of these biases underscores how retail investment decisions are often influenced by emotional factors. These statistics not only provide insights into investors' behavioral patterns but also serve as a foundation for evaluating the impact of these biases on portfolio performance. The findings underscore the necessity of implementing behavioral education interventions to help retail investors mitigate the adverse effects of these biases.

IV. RESULT

Findings from the quantitative survey reveal that behavioral biases significantly influence investment decision-making among retail investors in emerging markets. The dominant biases identified are overconfidence (70%), herding (50%), anchoring (40%), and loss aversion (60%),

each having unique impacts on decision-making patterns. Statistical analysis indicates significant relationships between these biases and investment performance, particularly regarding risk levels and potential returns. Overconfidence bias exhibits the highest positive correlation with investment performance, reflecting investors' excessive confidence in their ability to predict market trends. In contrast, biases such as herding, anchoring, and loss aversion negatively affect decision-making by fostering emotional and irrational choices. Figure 1 illustrates how these biases contribute to fluctuations in investment performance, offering a visual representation that strengthens the understanding of the identified correlation patterns. These findings underscore the importance of educational interventions to help investors mitigate the adverse effects of behavioral biases.

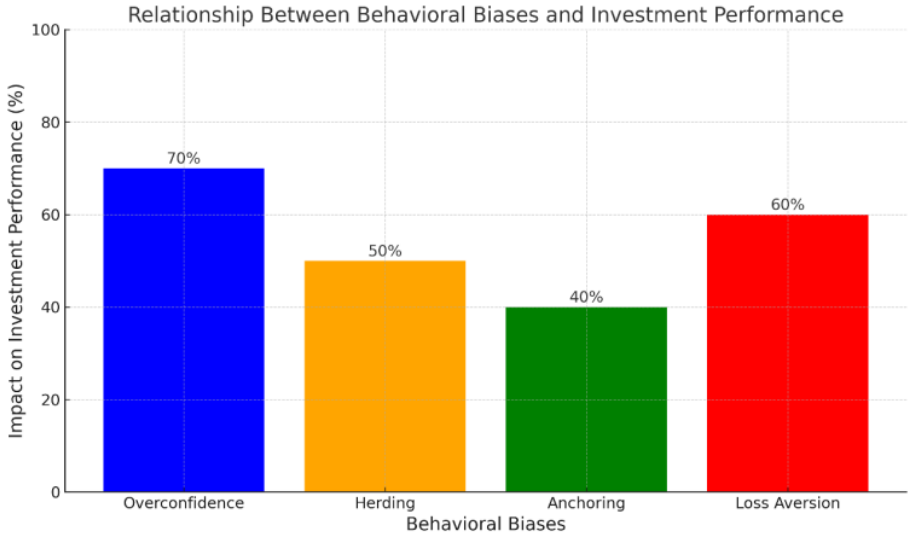

Figure 1. Relationship between Behavioral Biases and Investment Performance

Results from in-depth interviews provide additional insights into the psychological and social factors influencing investor behavior. Most participants reported that their decisions were often shaped by social opinions and an overestimation of their ability to predict the market. These factors elevate the risk of irrational decision-making, which can negatively impact portfolio performance. Furthermore, interviews revealed that many investors tend to overlook thorough analysis, relying instead on collective trends or advice from their social environments. Figure 2 summarizes the main themes identified, such as the role of emotions, risk perceptions, and social influence in investment decisions. These findings highlight the need for a better understanding of how psychological factors can be moderated through education and strategic interventions to

support more rational decision-making. By addressing these dynamics, efforts to enhance financial literacy can become more targeted and effective.

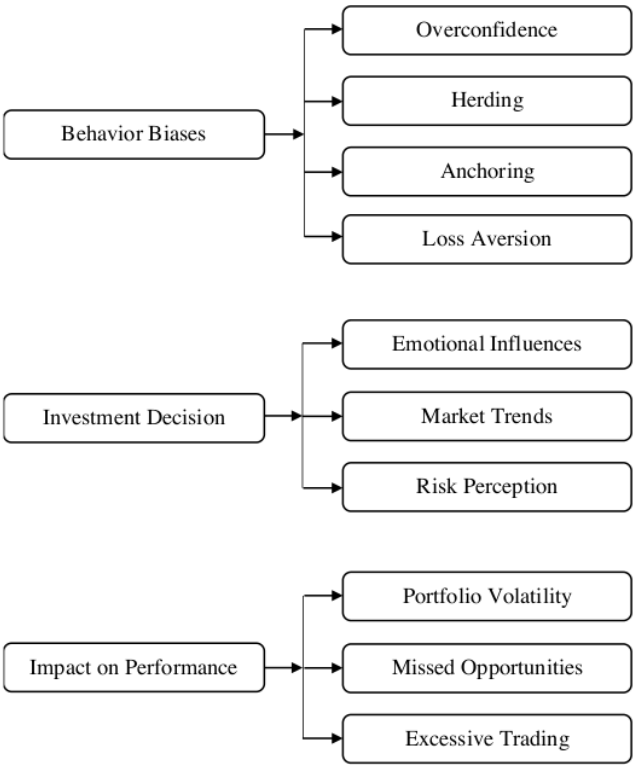

Figure 2. Qualitative Theme Diagram from Interviews

In the context of analyzing the relationship between behavioral biases and investment performance, it is crucial to understand the influence of each bias in depth. Behavioral biases not only affect how investors make decisions but also directly impact their portfolio outcomes. To evaluate these effects, the statistical relationships between behavioral biases and investment returns were analyzed using correlation methods. The analysis reveals that each bias has a varying degree of influence on investment returns, either positive or negative. For instance, overconfidence bias demonstrates a strong positive relationship with investment returns, while other biases tend to have negative effects. Table 1. Correlation Between Behavioral Biases and Investment Returns provides a detailed overview of these correlations, including the statistical significance values for each analyzed bias.

Table 4. Correlation Between Behavioral Biases and Investment Returns

Behavioral Biases	Correlation with Investment Return (r)	Significance (p-value)
Overconfidence	0.65	0.01

Herding	-0.48	0.03
Anchoring	-0.35	0.05
Loss Aversion	-0.6	0.02

To support the results presented, Table 4 provides further details regarding the relationship between behavioral biases and investment returns. The correlation values indicate that overconfidence bias has a strong positive relationship (r = 0.65) with investment returns, implying that investors with higher confidence levels tend to achieve better outcomes. In contrast, herding and anchoring biases show negative correlations of -0.48 and -0.35, respectively, suggesting that following the majority or overly relying on initial information may reduce investment performance. Loss aversion bias exhibits the highest negative correlation (-0.6), indicating that the fear of losses can significantly harm investment outcomes. All these biases are statistically significant, supporting the conclusion that these relationships are not due to random chance. Therefore, this table underscores the importance of understanding and managing behavioral biases to enhance investment decision-making.

A qualitative interview analysis offers in-depth insights into the factors influencing investment decision-making among retail investors. The interviews identified various key themes that reflect relevant psychological and social aspects in the context of behavioral biases. These themes not only explain how biases such as overconfidence and herding affect individual decisions but also reveal the roles of emotions and risk perception as driving factors. Furthermore, the interviews demonstrate that these biases have a direct impact on investment performance, such as increased portfolio volatility and reduced potential gains. Table 5 below summarizes the main themes, sub-themes, and key insights identified through the qualitative data analysis. This information helps to elaborate on the relationship between behavioral biases and investment decision outcomes in greater detail.

Table 5. Tema dari Analisis Wawancara

Theme	Sub-themes	Key Insights
Behavioral Biases	Overconfidence, Herding, Anchoring, Loss Aversion	Common biases influencing rational decision-making.
Decision-Making Influences	Emotions, Risk Perception, Social Influence	Various psychological and social dynamics affect decisions.
Impact on Performance	Portfolio Volatility, Missed Opportunities, Overtrading	Biases increase risks and reduce performance outcomes.

To support the findings presented, Table 5 provides detailed insights into the main themes identified from the qualitative interviews. The theme of behavioral biases encompasses elements such as overconfidence, herding, anchoring, and loss aversion, which are common biases that often influence rational decision-making by investors. The theme of decision-making influences highlights the roles of emotions, risk perception, and social influence as primary factors shaping

investor mindsets. The final theme, impact on performance, illustrates how these biases contribute to increased portfolio volatility, missed investment opportunities, and excessive trading behavior. This analysis confirms that behavioral biases not only affect the decision-making process but also have a direct impact on investment outcomes. By understanding these relationships, interventions aimed at mitigating the effects of biases can focus on financial education and risk management strategies. This table provides a robust foundation for understanding the qualitative aspects of behavioral biases and their implications in the context of investment.

V. DISCUSSION

The findings of this study provide new insights into the role of behavioral biases in investment decision-making within emerging markets, with an emphasis on behavioral finance theory. The results reveal that overconfidence, herding, anchoring, and loss aversion biases play a significant role in influencing decision-making patterns and investment performance. These biases not only affect individual decision-making processes but also have collective impacts that can alter overall market dynamics. This study supports and extends previous findings, such as those reported by (Zhao et al., 2025) and (Lu & Li, 2023), by highlighting the specific context of retail investors in emerging markets. Moreover, the results underscore the importance of understanding how these behavioral biases are amplified by unique social, cultural, and economic factors in such markets. Consequently, this research makes a vital contribution to the expansion of the behavioral finance literature in regions that have been previously underrepresented.

Within the framework of behavioral finance theory, overconfidence bias is identified as a dominant factor influencing investment performance. This bias refers to the tendency of individuals to overestimate their abilities in making predictions or decisions, particularly under conditions of uncertainty. Excessive confidence leads to high levels of trading activity, often unsupported by adequate analysis, consistent with the findings of (Ul Abdin et al., 2022). However, in this context, the limited access to information frequently observed in emerging markets exacerbates the impact of this bias, as also noted by (Bennett et al., 2023). Additionally, investors in emerging markets tend to have lower levels of financial literacy, which further intensifies the negative effects of overconfidence on investment outcomes. This highlights the need for intervention strategies aimed at improving financial literacy and mitigating the impact of this bias on investment decisions.

Anchoring bias also plays a significant role, illustrating how initial information influences investment decisions, in line with the findings of (Owusu & Laryea, 2023). This bias occurs when individuals rely excessively on initial information (anchors) as a benchmark for evaluation or decision-making, even when such information may be outdated or irrelevant. In the context of

emerging markets, the reliance on invalid information as an initial reference tends to be higher due to limited financial literacy and restricted access to data. This phenomenon is often exacerbated by less transparent market dynamics, where accurate information is difficult to obtain or interpret. Finally, the loss aversion bias identified in this study highlights a high sensitivity to the risk of losses, contributing to suboptimal decisions, such as holding onto losing assets for too long. This reinforces prospect theory, as presented by (Hasan et al., 2023), which emphasizes investors' preference to avoid losses, even at the expense of potential gains.

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The mixed-methods approach employed in this study is a key strength, as it integrates quantitative data with qualitative insights. This approach facilitates the identification of behavioral biases through descriptive and inferential statistics, providing a quantitative overview of the extent to which these biases influence investment decisions. On the other hand, qualitative insights derived from in-depth interviews enrich the understanding of the motivations, emotions, and social contexts that shape investor behavior. This combination of methods results in a more comprehensive understanding, enhancing the literature with relevant and contextual empirical findings. As noted by (Jain et al., 2023), such an approach is essential for understanding the complex aspects of financial decision-making, particularly those involving psychological and social factors. Furthermore, this approach enables the exploration of individual differences among investors, which are often overlooked in purely quantitative analyses. Thus, the integration of mixed-methods contributes significantly to providing a more holistic and in-depth perspective on the phenomenon of behavioral biases in emerging markets.

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This study contributes to the behavioral finance literature through an in-depth analysis of behavioral biases in emerging markets. It not only confirms previous findings but also highlights the unique conditions that amplify these biases, such as low financial literacy, limited transparency of information, and dependence on social dynamics. The characteristics of emerging markets, which are generally more volatile and less structured, create an environment conducive to the emergence of behavioral biases that often exacerbate investment decision-making processes. Additionally, this research provides empirical evidence on how specific factors, such as limited access to information, influence individual investment preferences and strategies. The findings also emphasize the need for more targeted financial education approaches, focusing on developing data analysis skills and risk management capabilities among retail investors. Overall, this study offers practical implications for enhancing financial education strategies aimed at mitigating the negative impacts of behavioral biases on retail investors, while simultaneously providing relevant theoretical insights for future research.

VI. CONCLUSION AND RECOMMENDATION

his study concludes that behavioral biases, particularly overconfidence and herding, are highly prevalent among retail investors in emerging markets. These biases significantly impact the investment decision-making process and portfolio performance, often resulting in suboptimal outcomes. Overconfidence bias drives investors to engage in excessive trading and take unnecessary risks, which ultimately harm their portfolio performance. Conversely, herding bias exacerbates market inefficiencies by triggering collective behavior that disregards individual analysis, thereby increasing market volatility. These findings underscore the importance of psychological and social factors in shaping investment behavior and highlight the necessity of strategies designed to mitigate the negative effects of these biases. By understanding these dynamics, more focused interventions can be developed to help investors adopt more rational and data-driven approaches.

To address these challenges, it is recommended that targeted investment education programs be developed with an emphasis on the principles of behavioral finance. These programs should aim to raise investor awareness of cognitive biases and provide practical tools to improve decision-making and risk management. Educational materials could include training on risk analysis, managing emotions in investment, and implementing effective portfolio diversification techniques. Furthermore, future research is needed to explore the use of alternative data sources, such as social media activity, to capture behavioral trends in real-time. Such data can offer deeper insights into the manifestation of biases across various contexts, including during volatile market conditions. These follow-up studies are expected to enrich the understanding of investor psychology, expand the behavioral finance literature, and provide practical guidance for policymakers and educators.

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