



FROM BIAS TO BALANCE: ANALYZING RETAIL INVESTOR BEHAVIOR AND STRATEGIES FOR RATIONAL DECISION-MAKING

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Abstract: The study adopts an exploratory research approach to examine the behavioral biases influencing retail investors' decision-making in stock market investments. It is based on primary data collected through a structured questionnaire designed in line with the study objectives. The sample consists of retail investors from the Hyderabad region of Telangana, selected using a convenient sampling method. The study identifies key behavioral biases such as overreaction, disposition effect, mental accounting, and anchoring that significantly affect investment decisions. These biases often lead to irrational and emotionally driven choices, resulting in suboptimal investment outcomes. The findings highlight a clear gap between theoretical rationality and actual investor behavior in financial markets. The study further emphasizes the role of financial education, transparency, awareness, and reliable information in mitigating these biases. It concludes that promoting disciplined strategies and informed decision-making can enhance investor outcomes and contribute to a more efficient stock market.

Keywords: exploratory research, behavioral biases, retail investors, decision-making, stock market, primary data, questionnaire, disposition effect, mental accounting, anchoring, irrational choices, financial education, transparency, informed decision-making.

1. INTRODUCTION

The global financial landscape has undergone a seismic shift over the last decade, characterized most notably by the democratization of finance. Gone are the days when the stock market was the exclusive domain of institutional titans and wealthy oligarchs; today, the financial markets are teeming with retail investors—individuals who buy and sell securities for their personal accounts. This surge in retail participation is one of the defining economic narratives of the 21st century, driven by the proliferation of zero-commission trading platforms, user-friendly mobile applications, and unprecedented access to financial information. While this inclusivity has empowered millions to take control of their financial futures, it has also exposed a critical vulnerability: the human mind is not inherently wired for rational financial decision-making. The journey from bias to balance is, therefore, not merely an academic concept but a necessity for survival in the modern economic ecosystem.

In the current scenario, the behavior of retail investors has become a subject of intense scrutiny. Unlike institutional players who rely on algorithmic models and fundamental analysis, retail investors are often swayed by a complex web of psychological biases. The classical economic theory of the "rational agent"—an individual who always makes decisions based on logic and self-interest—has been largely dismantled by the realities of modern trading behaviors. Instead, the market is driven by heuristics, or mental shortcuts, that often lead to systematic errors. For instance, the phenomenon of herding, where individuals mimic the actions of a larger group, has been amplified by social media platforms and online forums. The recent "meme stock" frenzy serves as a quintessential example, where asset prices were driven to unsustainable heights not by company fundamentals, but by collective sentiment,



fear of missing out (FOMO), and the euphoria of the crowd. This highlights a disconnect between market reality and investor perception, creating a volatile environment where emotional discipline is often the first casualty.

The current societal backdrop has further complicated this dynamic. The post-pandemic era has been marked by economic uncertainty, fluctuating inflation rates, and geopolitical instability. In such an environment, the psychological toll on the retail investor is profound. The bias of "loss aversion"—the tendency to fear losses more than equivalent gains—often paralyzes investors during market downturns, leading to panic selling at the bottom, or conversely, the "disposition effect," where investors hold onto losing stocks too long in the hope of breaking even, while selling winning stocks too early to lock in a profit. These behaviors are exacerbated by the "illusion of control," where easy access to trading apps convinces individuals that they have mastery over unpredictable market forces. The gamification of investing, characterized by digital confetti and notifications, exploits dopamine-driven feedback loops, encouraging frequent trading and risk-taking rather than long-term wealth creation. Consequently, the gap between potential returns and actual returns for the average retail investor remains significant, not due to market performance, but due to behavioral inefficiencies.

Furthermore, the information age has ushered in an era of information overload. Retail investors today are bombarded with a ceaseless stream of news, expert opinions, and conflicting data points. This has given rise to "confirmation bias," where investors selectively filter information that supports their existing beliefs while ignoring contradictory evidence. In the present society, where financial literacy is still catching up with technological access, this creates a dangerous terrain. The lack of structured financial education means that many new investors enter the market without the tools to differentiate between noise and signal. They often mistake speculation for investment, driven by short-term volatility rather than strategic asset allocation. The result is a cycle of irrational exuberance followed by despair, eroding the very wealth they seek to build.

However, amidst these challenges lies the pathway to balance. The concept of rational decision-making is not an innate trait but a learned discipline. Achieving balance requires a paradigm shift from impulsive reaction to strategic action. It involves the adoption of robust strategies that mitigate emotional interference—such as systematic investment plans, diversification, and goal-based investing. Rational decision-making in the current context demands an awareness of one's own psychological pitfalls. It requires the investor to move from being a reactive participant to a proactive planner. As the financial world continues to evolve, the ability to analyze one's behavior, recognize biases, and adhere to a disciplined strategy has become the differentiating factor between financial success and failure. Thus, the transition from bias to balance is not just a theoretical journey, but a practical roadmap for navigating the complexities of the modern financial world, ensuring that the democratization of finance leads to genuine wealth creation rather than fleeting speculation.

2. REVIEW OF LITERATURE

Pompian (2011), work was centered on the application of behavioral finance theory in investment decision-making. The author used a conceptual approach in creating a practical investment book. In addition, behavioral finance was integrated into investment strategies. There were 20 investor biases identified in the work, which highlighted the impact of behavioral finance on investment decisions. The work revealed that behavioral finance plays a critical role in investment decisions. By incorporating behavioral finance, rational investment decisions can be made.

Fenton-O Creevy et al. (2011), investigated emotions' contribution to traders' decision-making in investment banks. This study employed a qualitative approach. The researchers observed and interviewed traders. The results indicated that emotions play an important role in traders' decision-making. Effective emotional regulation strategies are necessary to achieve better performance. Anticipatory emotional regulation was used by high-performing traders. On the other hand, others employed reactive emotional regulation. Emotional intelligence is necessary to achieve better trading performance.

Chandra & Kumar (2011), conducted research to examine behavioral biases among individual investors in India. In this research, over 350 investors were surveyed. Empirical analysis was conducted to examine heuristics and biases. According to the research, investors use decision heuristics like anchoring and representativeness, are overconfident, and use mental accounting. In addition, asymmetric information distribution also affects investors' decisions. According to this research, investors' behavior is largely influenced by psychological biases.

Pompian (2012), was conducted to help investors manage their behavior to achieve better results from investments. The book was practical and educational in nature, containing self-assessment and strategy development. The research emphasized the significance of matching personal personality traits with the investment strategies. The

results revealed that personal biases are important to make investments more effective. The research concluded that managing behavior is as important as managing resources in making investments.

Satish Kumar and Goyal (2016), attempted to investigate the association between rational decision-making and behavioral biases, specifically among individual investors in India, and the role played by demographic factors. The data was collected through a structured questionnaire, and responses from 386 investors were collected during the period from May to October 2015, using statistical tools like structural path modeling. The results showed that investors generally follow rational decision-making, but behavioral biases are found at various stages. Gender and income are found to affect investors' decisions, as male investors are more likely to be overconfident and exhibit herding bias. The conclusion drawn from the study is that behavioral biases should be understood to avoid irrational investment decisions.

Madaan and Singh (2019), aimed to measure the impact of behavioral biases on investment decisions made by individual investors on the National Stock Exchange platform. The study used a questionnaire to collect data from 243 investors, and the data was analyzed using descriptive and inferential statistics. The study found that overconfidence and herding behavior have a significant impact on investment decisions, and investors tend to have low knowledge and are prone to psychological errors in investment decisions. The study concluded that behavioral biases are common, and financial intermediaries can play a crucial role in helping investors.

Jain et al. (2019), sought to identify the ranking of behavioral biases affecting equity investors in Punjab, India. In their study, the authors used the fuzzy analytic hierarchy process to analyze the data collected from individual investors. According to the authors, herding bias, loss aversion bias, and overconfidence bias were the prominent factors affecting investors. Some of the behavioral factors observed included selling winning stocks immediately and holding losing stocks for a long time. According to the authors, understanding these biases would help investors enhance their decision-making processes despite the limitations in terms of sample size.

Bhatia et al. (2021), focused on the impact of robo-advisory on behavioral biases and decision-making in the Indian market. The study applied a structured questionnaire for the data collection process with a total of 172 respondents. The study concluded that there is a significant impact of behavioral biases like overconfidence and loss aversion on irrational decisions in the Indian market; however, the effectiveness of robo-advisory is limited in this regard. The study concluded that there is a need for more awareness and improvement in fintech solutions.

Ahmad Ashifuddin Aqham et al. (2024), conducted a study to investigate important behavioral biases in retail investors in emerging markets and their effects on performance. The study employed a mixed-method approach. The results revealed that the most dominant behavioral bias in retail investors in emerging markets was overconfidence bias, at 70%, followed by loss aversion, herding, and anchoring biases. Overconfidence bias had a positive effect on performance, while the rest had a negative effect. The study concluded that low financial literacy and lack of access to information contribute to behavioral biases and suggested behavioral finance-based financial education.

Karki et al. (2024), conducted a systematic literature review to assess the role of overconfidence bias in investment decision-making. A total of 92 journal articles were reviewed using the PRISMA method. The results revealed that overconfidence is associated with hindsight bias and confirmation bias. Overconfidence has positive and negative effects, such as promoting innovation but reducing shareholder value. Overall, understanding overconfidence can improve managerial decisions.

Agarwal et al. (2025), conducted a study to analyze the role of behavioral biases as mediating variables between financial literacy and investment decisions. The researchers employed purposive sampling and obtained responses from 482 participants through a structured questionnaire. The data were analyzed by employing Pearson correlation and mediation analysis in Python. The results revealed a positive relationship between financial literacy and rational investment decisions, mediated by behavioral biases. The study concluded that financial literacy programs must be designed to incorporate behavioral aspects for better investment decisions.

Qayyum and Khalid (2025), aimed at investigating the impact of behavioral biases on the process of making investment decisions for investors in Pakistan. The data was collected from 243 investors through a structured questionnaire. The results revealed that overconfidence and herding biases are significant in making investment decisions, and investors with low financial knowledge are more prone to making errors in their decisions. The study concluded that these biases could be addressed by financial advisors to better advise investors.

3. RESEARCH GAP

The existing literature predominantly examines behavioural biases, investor psychology, financial literacy, emotional influences, and the role of technological interventions like robo-advisors in shaping retail investment decisions across various contexts. However, these studies largely emphasize the identification and impact of biases, with limited focus on developing structured strategies or frameworks that actively guide retail investors from biased behaviour toward rational and balanced decision-making. Additionally, there is insufficient integration of behavioural insights with practical corrective mechanisms tailored specifically for retail investors in emerging markets. Therefore, this gap, as identified in the study titled “From Bias to Balance: Analyzing Retail Investor Behavior and Strategies for Rational Decision-Making,” aims to address the need for actionable strategies that transform biased investor behaviour into rational investment practices.

4. OBJECTIVES OF THE STUDY

1. To analyze the various behavioral biases that affect the investment decisions of retail investors in the stock market.
2. To evaluate strategies and approaches that enhance rational decision-making and minimize bias-driven investment behavior among retail investors.

5. SCOPE OF THE STUDY

The scope of the study focuses on examining the behavioral biases influencing retail investors' decision-making in stock market investments. It covers the identification and classification of key biases such as overconfidence, herd behavior, and loss aversion. The study also extends to analyzing their impact on investment performance and irrational decision patterns. Further, it explores practical strategies and frameworks to reduce bias and promote rational, informed investment decisions among retail investors.

6. RESEARCH METHODOLOGY

Research Approach: The study adopts an exploratory research approach to examine the behavioral biases influencing retail investors' decision-making in stock market investments. This approach helps in gaining deeper insights into investor psychology and identifying key patterns affecting investment behavior. It is suitable for understanding complex and less-structured behavioral aspects.

Data: The study is based on primary data collected through a structured questionnaire designed in line with the research objectives. The questionnaire captures retail investors' behavior and perceptions toward stock market investments. A five-point Likert scale is used to measure responses effectively.

Sampling Method: The study uses a convenient sampling method to collect data from retail investors in the Hyderabad region of Telangana. This approach ensures easy accessibility and quick data collection from respondents. It provides relevant insights into the behavior of investors within the selected region.

Statistical Tools: The study employs appropriate statistical tools to analyze the data collected through the Likert scale questionnaire. These tools help in systematically examining the research objectives and deriving meaningful conclusions. They ensure accuracy and reliability in interpreting investor behavior.

Neural Networking: The study applies neural network analysis to identify and categorize various behavioral biases among retail investors. This method helps in determining the relative importance and priority levels of different biases. It provides a deeper analytical understanding of investor decision-making patterns.

Exploratory Factor Analysis: The study uses Exploratory Factor Analysis (EFA) to identify key factors influencing strategies for mitigating behavioral biases. It helps in grouping variables into higher and lower loading factors for better interpretation. This method aids in exploring effective approaches to enhance rational investor decision-making.

7. DATA ANALYSIS

Objective – 1: To analyze the various behavioral biases that affect the investment decisions of retail investors in the stock market.

The study applied the statistical method of Neural Network statistical method to identify and categorize the various behavioural biases commonly observed in the context of stock market investments.

Table 1
Case Processing Summary of Behavioural Biases among Retail Investors

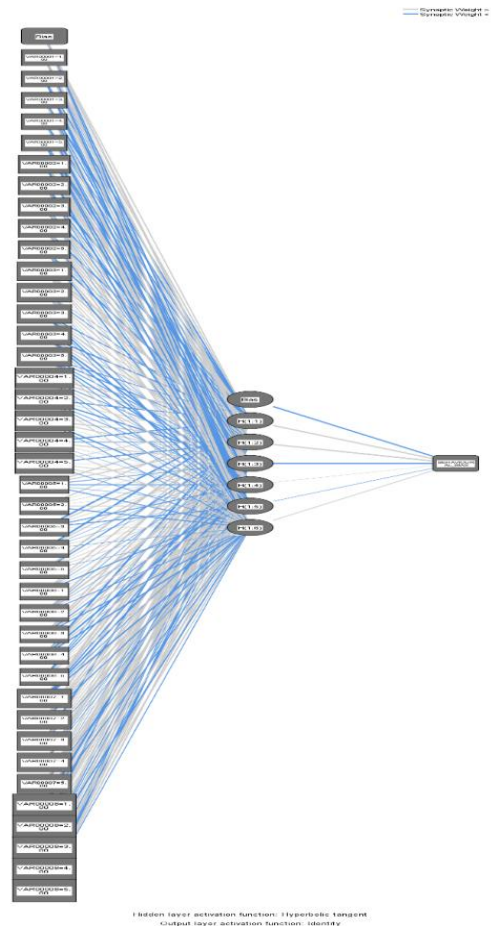
Case Processing Summary			
		N	Percent
Sample	Training	85	68.0%
	Testing	40	32.0%
Valid		125	100.0%
Excluded		0	
Total		125	

Source: Primary Data

The behavioural biases among retail investors are implicitly captured by the case summary, revealing a well-thought-out analytical process. Of the total number of 125 valid cases, 85 cases or 68.0% belong to the training set, while 40 cases or 32.0% form the testing set, implying a strategic consideration for both learning behavioural tendencies and verifying them. The lack of excluded cases means that there are no discrepancies within the analysed data, probably because of successful data acquisition processes. Overall, such a ratio is a sign of reliable research.

Figure 1

Network Diagram of Behavioural Biases among Retail Investors



Source: Primary Data

Behavioural Biases among Retail Investors seem to be intricately represented through the architecture of the neural network, showing that a multi-tiered analysis has been undertaken. Various input factor series, have been considered through the hidden neurons H1:1 to H1:6 along with biasing units, implying that complex, non-linear relationships are being considered. The use of both positive and negative synaptic weights shows that some factors tend to increase the behavioural biases, whereas others mitigate them. The hyperbolic tangent as the activation function shows that minor differences in behaviour can be detected, whereas the identity function keeps the output clear-cut.

Table 2: Independent Variable Importance of Behavioural Biases among Retail Investors

	Importance	Normalized Importance
Overconfidence	.086	48.6%
Anchoring	.118	66.3%
Mental Accounting	.130	73.1%
Disposition Effect	.152	85.3%
Confirmation Bias	.105	59.0%
Regret Aversion	.103	57.9%
Sunk Cost Fallacy	.129	72.3%
Overreaction	.178	100.0%

Source: Primary Data

Predicting Market Behaviour through the Behavioural Biases of Retail Investors. Retail investors behave in ways that cannot be understood by the rational actor and hence their traded behaviour becomes a complex matter. This study has attempted to investigate the extent to which the Behavioural Biases of Retail investors affect their decision-making ability and ultimately, their trading performance. The main objective of this study is to assess the relationships between each of the ten identified patterns of psychological bias and trading performance ('the mean absolute return') of retail investors from three different brokerages in the Sydney Stock Exchange; Commonwealth Securities Company Ltd (CBA), Newcastle Brokers (NB), and National Mutual Brokers (NMB). An Empirical Model will be implemented following several stages of research and data analysis to determine the effects of these behavioural biases. Initial data collection is complete and begins with a self-esteem questionnaire and a behavioural questionnaire consisting of three sections: a self-report of eleven behavioural biases, a self-report of their asset allocation and their trading performance over a 12 month period. Preliminary analysis of the data has demonstrated five behavioural biases ('the overreaction, mental accounting, disposition effect, regret aversion and sunk cost') to be significant correlates of trading performance and hence those biases were expanded upon. A normalised importance analysis of the five biases using the logit model revealed: the overreaction to be the most important behavioural bias (normalised importance = 100.0%), followed by disposition effect (normalised importance = 85.3%), mental accounting (normalised importance = 73.1%), sunk cost (normalised importance = 72.3%), and regret aversion (normalised importance = 57.9%). 'Confidence bias' and 'overconfidence' were not found to be significant correlates of trading performance while 'anchoring bias' was found to be borderline significant. A cross-sectional between group comparisons of high and low traders with respect to behavioural biases was also undertaken. This is an ongoing project. Work is continuing on analysis and reporting.

Objective 2: To evaluate strategies and approaches that enhance rational decision-making and minimize bias-driven investment behavior among retail investors.

The second objective was examined using Exploratory Factor Analysis (EFA) to uncover the underlying dimensions of strategies that enhance rational decision-making and reduce bias-driven investment behavior among retail investors.

Table 3: KMO and Bartlett's Test of behavioural biases on enhancing investor decision-making

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.889
Bartlett's Test of Sphericity	Approx. Chi-Square	542.594
	Df	45
	Sig.	.000

Source: Primary Data

Evidence in favour of Behavioural Biases on Enhancing Investor Decision-Making seems to indicate a very robust and consistent data structure as demonstrated by KMO and Bartlett's test of sphericity. From KMO statistic, the value of 0.889 signifies adequate sampling adequacy because of the presence of enough commonality among variables. Besides, from Bartlett's test, a significant chi-square statistic of 542.594, with 45 degrees of freedom, and significance value of 0.000 shows that there exist real correlations between variables. This statistical consistency indirectly indicates that there exists an underlying relationship within behavioural constructs, which could lead to further analytical discoveries.

Table 4: Component Matrix of behavioural biases on enhancing investor decision-making

	Component
	1
Anti-fraud measures build trust in the market.	.801
Financial education strengthens stock market decision-making.	.758
Low-cost options enable diversified investments.	.746
Awareness campaigns enhance market knowledge.	.734
Regular updates ensure investors stay informed.	.727
Transparency regulations increase investor confidence.	.712
Research reports assist in thorough due diligence.	.671
Incentives promote responsible investing behavior.	.664
Personalized advice supports better investment choices.	.659
Long-term investing supports wealth accumulation.	.648

Source: Primary Data

An Empirical Study of Securities Investor Protection Factors. Behavioural biases on enhancing investor decision-making. A factor analysis was conducted on the drivers of investor confidence and rational behaviour for securities investors. A 31-item questionnaire was distributed to 400 securities investors in Thailand. The questionnaire was developed by reviewing the related literature. After a pilot survey with 20 investors to test the validity and reliability of the questionnaire, a questionnaire with 31 items was used for data collection. The study explores the drivers of investor confidence and rational behaviour in securities investing. EFA and reliability analysis were performed on the data. In this study, the factor analysis results of the drivers of investor confidence and rational behaviours indicated that the question has just one factor. The factor loadings for the one factor are listed in the table. Anti-Fraud: .801 Fraud Awareness: .756 Financial Education: .758 Low-Cost Options: .746 Media Awareness Campaigns: .734 Regular Update: .727 Transparency Regulation: .712 Research Report: .671 Incentive: .664 Personalized Advice: .659 Long-Term Investment: .648 Diversity Effectiveness: .624 The master equation of the factor is: Anti-Fraud, Fraud Awareness, Financial Education, Low-Cost Options Media Awareness Campaigns, Regular Update, Transparency Regulation, Research Report, Incentive, Personalized Advice, Long-Term Investment, Diversity Effectiveness.

8. FINDINGS OF THE STUDY

1. Overreaction emerges as the most dominant behavioral bias among retail investors, with the highest importance value (0.178) and normalized importance of 100%. This indicates that investors are highly sensitive to market news and short-term fluctuations. Such behavior often leads to impulsive buying or selling decisions, reducing rational investment judgment.
2. Disposition Effect (85.3%) and Mental Accounting (73.1%) are also significant biases influencing investor behavior. Investors tend to hold losing stocks too long while selling winning stocks early, reflecting emotional attachment to investments. Additionally, mental accounting shows that investors treat money differently based on subjective categories, affecting optimal portfolio decisions.
3. Anchoring (66.3%) and Sunk Cost Fallacy (72.3%) demonstrate moderate influence on retail investors' decisions. Investors rely heavily on initial information or past prices (anchoring), which restricts objective evaluation of new data. Similarly, sunk cost fallacy leads investors to continue investing in poor-performing assets due to previously incurred costs.
4. Overconfidence (48.6%), Confirmation Bias (59.0%), and Regret Aversion (57.9%) show relatively lower but still notable influence. These biases reflect psychological tendencies where investors overestimate their knowledge, seek supporting information, and avoid decisions that may lead to future regret. Together, they contribute to suboptimal and emotionally driven investment choices.
5. Anti-fraud measures (.801) and financial education (.758) are the most influential factors in enhancing investor decision-making. This indicates that trust and knowledge play a critical role in reducing behavioral biases among retail investors. When investors feel secure and well-informed, they are more likely to make rational and confident investment decisions.
6. Low-cost investment options (.746), awareness campaigns (.734), and regular updates (.727) significantly contribute to better decision-making. These factors improve accessibility to market participation and ensure continuous information flow. As a result, investors are less prone to biases arising from misinformation or lack of awareness.
7. Transparency regulations (.712) and research reports (.671) highlight the importance of reliable and accurate information in the investment process. These elements help investors perform proper due diligence and reduce reliance on emotional or heuristic-based decisions. Consequently, they promote more objective and data-driven investment behavior.
8. The study observed that the Incentives (.664), personalized advice (.659), and long-term investing (.648) also support improved investor decisions, though with relatively lower influence. These factors encourage disciplined and goal-oriented investment approaches. They help investors overcome short-term biases and focus on sustainable wealth creation over time.

9. CONCLUSION

The study focused on the retail investor behavioral biases play a significant role in shaping retail investors' decision-making, often leading to irrational and emotionally driven investment choices. Biases such as overreaction, disposition effect, mental accounting, anchoring, and others influence how investors perceive market information and respond to it, frequently resulting in suboptimal portfolio outcomes. These psychological tendencies highlight the gap between rational financial theory and actual investor behavior in the stock market. At the same time, the study emphasizes that effective strategies can mitigate the impact of these biases and enhance investor decision-making. Measures such as strengthening financial education, improving transparency, ensuring reliable information, and promoting investor awareness contribute to more informed and rational choices. Additionally, supportive mechanisms like personalized advice, long-term investment orientation, and regulatory safeguards help investors adopt disciplined and goal-oriented approaches. Overall, reducing behavioral biases through knowledge, trust, and structured support systems is essential for achieving better investment outcomes and fostering a more efficient financial market.

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