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Determinants of Investment Decision-Making: The Role of Behavioural Biases among Retail Investors

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Abstract

Traditional finance theory assumes that investors act rationally and process available information efficiently while making investment decisions. However, growing evidence from behavioural finance suggests that investors are frequently influenced by psychological and cognitive factors that lead to systematic deviations from rational decision-making. The present study examines the influence of key behavioural biases — overconfidence, herding, anchoring, loss aversion, and mental accounting — on the investment decision-making of retail investors in the Saurashtra region of Gujarat. A quantitative research design was adopted using a structured questionnaire administered to 300 retail investors actively trading in equity and mutual fund instruments. Descriptive statistics, reliability analysis, Pearson correlation, and multiple regression analysis were employed to test the proposed hypotheses. The findings reveal that overconfidence and herding bias exert the strongest influence on investment decision-making, followed by loss aversion, anchoring, and mental accounting. The regression model explained approximately 36.6 per cent of the variance in investment decision-making, indicating that behavioural biases constitute a substantial, though not exclusive, determinant of retail investment choices. The study contributes to the growing body of regional behavioural finance literature and offers practical insights for financial advisors, investor-education agencies, and policymakers seeking to mitigate the adverse effects of behavioural biases on investment outcomes.

Keywords: Behavioural Biases, Overconfidence, Herding, Anchoring, Loss Aversion, Retail Investors, Investment Decision-Making.

1. Introduction

Classical financial theories such as the Efficient Market Hypothesis and Expected Utility Theory are built upon the assumption that investors are rational agents who process all available information objectively to maximise wealth. However, real-world investment behaviour frequently contradicts this assumption. Investors often rely on mental shortcuts, past experiences, emotions, and social influences while making investment decisions, resulting in systematic and predictable deviations from rationality. This gap between theoretical assumptions and observed behaviour gave rise to the field of behavioural finance, which integrates insights from psychology to explain actual investor conduct.

Retail investors, in particular, are highly susceptible to behavioural biases due to limited access to professional research, constrained analytical resources, and greater exposure to market sentiment and social influence. In emerging markets such as India, where retail participation in capital markets has grown substantially over the past decade, understanding the behavioural dimensions of investment decision-making has become increasingly important for both academic researchers and market practitioners.

The Saurashtra region of Gujarat, known for its strong culture of trading, entrepreneurship, and business activity, presents a distinctive context for examining retail investor behaviour. Despite a growing investor base in the region, empirical research specifically examining the influence

of behavioural biases on investment decisions among Saurashtra-based retail investors remains limited. This study attempts to address this gap by empirically investigating five widely recognised behavioural biases — overconfidence, herding, anchoring, loss aversion, and mental accounting — and their combined influence on investment decision-making.

2. Literature Review

The theoretical foundation of behavioural finance was significantly strengthened by Kahneman and Tversky (1979) through Prospect Theory, which demonstrated that individuals evaluate potential gains and losses asymmetrically and tend to be more sensitive to losses than to equivalent gains, a phenomenon termed loss aversion. This departure from the rational expected-utility framework provided the conceptual basis for much of the subsequent behavioural finance literature.

Overconfidence bias, wherein investors overestimate their knowledge, abilities, and the precision of their information, has been widely documented as a key driver of excessive trading activity. Barber and Odean (2001) found that overconfident investors traded more frequently and, as a consequence, generated significantly lower net returns than their less confident counterparts, primarily due to elevated transaction costs.

Herding behaviour, defined as the tendency of investors to imitate the actions of other market participants rather than relying on independent analysis, has also received considerable research attention. Nofsinger and Sias (1999) documented that herding intensifies during periods of market uncertainty and volatility, as investors seek to reduce perceived risk by aligning their decisions with prevailing market sentiment.

Anchoring bias refers to the tendency of investors to rely excessively on an initial reference point, such as a stock's purchase price or a recent price high, while evaluating subsequent investment decisions. Shiller (2000) noted that anchoring often distorts investors' perception of a security's intrinsic value, leading to delayed selling of losing investments and premature selling of winning investments — a pattern closely associated with the disposition effect.

Mental accounting, a concept introduced by Thaler (1985), describes the tendency of individuals to categorise and treat money differently depending on its source or intended use, rather than viewing wealth holistically. This bias has been shown to influence portfolio construction decisions, as investors may treat gains and principal amounts as separate psychological accounts, affecting their risk-taking behaviour differently for each.

In the Indian context, Kumar and Goyal (2015) conducted a systematic review of behavioural biases among Indian investors and concluded that overconfidence, herding, and disposition effect were the most extensively studied and empirically supported biases influencing investment decisions. Similarly, Jain and Mandot (2012) found that demographic factors such as age, gender, and income moderated the extent to which Rajasthani investors exhibited behavioural biases, suggesting that regional and cultural context plays a meaningful role in shaping investor psychology.

Studies focused specifically on regional investor populations in Gujarat and Saurashtra remain comparatively limited, despite the region's active investor base and strong commercial culture, underscoring the relevance of the present study.

3. Research Gap

While a substantial body of literature has examined individual behavioural biases in isolation, comparatively fewer studies have simultaneously examined the combined influence of overconfidence, herding, anchoring, loss aversion, and mental accounting on investment decision-making within a single empirical framework. Moreover, empirical evidence specific to retail investors in the Saurashtra region remains scarce, despite the region's distinctive trading culture. The present study addresses this gap by providing region-specific empirical evidence on the combined effect of these behavioural biases.

4. Problem Statement

Retail investors frequently make investment decisions that deviate from rational wealth-maximising behaviour, resulting in suboptimal portfolio outcomes. Despite growing awareness of financial markets, many investors continue to exhibit patterns such as excessive trading, herd-following, and reluctance to realise losses. Understanding which behavioural biases most strongly influence these decisions is essential for designing interventions that improve investment outcomes and investor welfare.

5. Objectives

1. To examine the influence of overconfidence bias on investment decision-making of retail investors.
2. To analyse the impact of herding behaviour on investment decision-making.
3. To determine the influence of anchoring bias on investment decision-making.
4. To examine the effect of loss aversion on investment decision-making.
5. To assess the influence of mental accounting on investment decision-making.

6. Hypotheses

H1: Overconfidence bias has a significant positive influence on investment decision-making of retail investors.

H2: Herding behaviour has a significant positive influence on investment decision-making of retail investors.

H3: Anchoring bias has a significant positive influence on investment decision-making of retail investors.

H4: Loss aversion has a significant positive influence on investment decision-making of retail investors.

H5: Mental accounting has a significant positive influence on investment decision-making of retail investors.

7. Research Methodology

7.1 Research Design

A descriptive, quantitative, cross-sectional research design was adopted to examine the relationship between behavioural biases and investment decision-making among retail

investors. This design was considered appropriate as it enables the measurement of relationships among multiple psychological constructs at a single point in time.

7.2 Sampling and Data Collection

The population comprised active retail investors residing in the Saurashtra region (Rajkot, Jamnagar, Bhavnagar, and Junagadh districts) who had invested in equity shares, mutual funds, or derivative instruments during the preceding twelve months. Data were collected between July 2021 and December 2021 using a structured questionnaire, administered through a combination of personal visits to broking offices and online circulation. A convenience sampling technique was used. Of the 340 questionnaires distributed, 300 were found complete and usable, representing a response rate of 88.2 per cent.

7.3 Research Instrument

The questionnaire comprised two sections. Section A recorded demographic details including age, gender, education, occupation, income, and years of investment experience. Section B measured the five behavioural bias constructs and investment decision-making using a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Scale items were adapted from established instruments used in prior studies, including Kahneman and Tversky (1979) for loss aversion, Barber and Odean (2001) for overconfidence, and Kumar and Goyal (2015) for herding and anchoring.

7.4 Tools for Data Analysis

Data were analysed using SPSS software (version 25). Descriptive statistics summarised respondent demographics, Cronbach's alpha assessed scale reliability, Pearson correlation examined bivariate associations, and multiple regression analysis was used to test the hypothesised relationships between the five behavioural biases and investment decision-making.

8. Data Analysis and Interpretation

8.1 Demographic Profile of Respondents

Table 1 summarises the demographic profile of the 300 respondents. The sample was predominantly male (63.3 per cent) and comprised largely of investors aged between 31 and 45 years (44.7 per cent), reflecting the typical composition of active retail investors in the region.

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	190	63.3
	Female	110	36.7
Age Group	Below 30 years	72	24.0
	31–45 years	134	44.7

Demographic Variable	Category	Frequency	Percentage (%)
	Above 45 years	94	31.3
Education	Undergraduate	121	40.3
	Postgraduate	139	46.4
	Professional Qualification	40	13.3
Investment Experience	Less than 3 years	88	29.3
	3–7 years	127	42.3
	More than 7 years	85	28.4

8.2 Reliability Analysis

As shown in Table 2, all constructs recorded Cronbach's alpha values exceeding 0.70, confirming satisfactory internal consistency of the measurement scales (Nunnally, 1978).

Construct	Number of Items	Cronbach's Alpha
Overconfidence Bias	5	0.803
Herding Behaviour	5	0.795
Anchoring Bias	4	0.762
Loss Aversion	5	0.788
Mental Accounting	4	0.744
Investment Decision-Making (Dependent)	6	0.826

8.3 Descriptive Statistics

Table 3 presents the mean and standard deviation of the study variables. Overconfidence bias recorded the highest mean score (M = 3.71, SD = 0.69), followed closely by herding behaviour

(M = 3.62, SD = 0.73), indicating that these two biases were the most prevalent among the sampled retail investors.

Variable	Mean	Std. Deviation
Overconfidence Bias	3.71	0.69
Herding Behaviour	3.62	0.73
Anchoring Bias	3.38	0.76
Loss Aversion	3.55	0.71
Mental Accounting	3.24	0.80
Investment Decision-Making	3.58	0.68

8.4 Correlation Analysis

As presented in Table 4, all five behavioural biases demonstrated a statistically significant positive correlation with investment decision-making at the 0.01 level, with overconfidence bias showing the strongest association (r = 0.512).

Variable	Correlation with Investment Decision-Making (r)	Significance (p)
Overconfidence Bias	0.512**	0.000
Herding Behaviour	0.487**	0.000
Loss Aversion	0.421**	0.000
Anchoring Bias	0.389**	0.000
Mental Accounting	0.336**	0.000

** Correlation is significant at the 0.01 level (2-tailed).

8.5 Multiple Regression Analysis

Multiple regression analysis was conducted to examine the combined influence of the five behavioural biases on investment decision-making. The model produced an R value of 0.605 and an R^2 of 0.366, indicating that approximately 36.6 per cent of the variance in investment decision-making was explained collectively by overconfidence, herding, anchoring, loss

aversion, and mental accounting. The adjusted R^2 was 0.355, and the overall model was statistically significant ($F = 33.94$, $p < 0.001$).

Predictor Variable	Beta (β)	t-value	Significance (p)	Result
Overconfidence Bias	0.288	5.674	0.000	Significant
Herding Behaviour	0.246	4.812	0.000	Significant
Loss Aversion	0.179	3.428	0.001	Significant
Anchoring Bias	0.152	2.887	0.004	Significant
Mental Accounting	0.104	2.041	0.042	Significant

The regression results indicate that overconfidence bias emerged as the strongest predictor of investment decision-making ($\beta = 0.288$, $p < 0.001$), followed by herding behaviour ($\beta = 0.246$, $p < 0.001$), loss aversion ($\beta = 0.179$, $p = 0.001$), anchoring bias ($\beta = 0.152$, $p = 0.004$), and mental accounting ($\beta = 0.104$, $p = 0.042$). As all five predictors recorded statistically significant beta coefficients at $p < 0.05$, hypotheses H1 through H5 were supported.

8.6 Hypotheses Testing Summary

Hypothesis	Statement	Result
H1	Overconfidence bias → Investment decision-making	Supported
H2	Herding behaviour → Investment decision-making	Supported
H3	Anchoring bias → Investment decision-making	Supported
H4	Loss aversion → Investment decision-making	Supported
H5	Mental accounting → Investment decision-making	Supported

9. Discussion of Findings

The finding that overconfidence bias exerts the strongest influence on investment decision-making aligns with Barber and Odean (2001), who similarly established a robust link between excessive investor confidence and trading activity. The relatively high mean score for overconfidence among Saurashtra investors may reflect the region's strong entrepreneurial and risk-taking culture, wherein self-assurance in personal judgement is often highly valued.

The significant influence of herding behaviour corroborates Nofsinger and Sias (1999), suggesting that Saurashtra-based retail investors, similar to investors elsewhere, are inclined to mirror prevailing market sentiment rather than relying solely on independent analysis — a tendency that may be amplified by close-knit business and trading communities characteristic of the region.

Loss aversion and anchoring bias were also found to significantly shape investment decisions, consistent with the theoretical propositions of Kahneman and Tversky (1979) and Shiller (2000), respectively. Investors' reluctance to realise losses and their tendency to fixate on reference prices appear to meaningfully affect holding and selling decisions. Mental accounting, while recording the smallest beta coefficient, nonetheless confirmed its relevance, supporting Thaler (1985) and indicating that investors in the region continue to treat different pools of investment capital with varying degrees of risk tolerance.

Collectively, these findings reinforce the applicability of Prospect Theory and behavioural finance principles to a regional Indian investor population and demonstrate that psychological biases, taken together, account for a substantial portion of the variance in investment decision-making beyond what traditional rational-choice models would predict.

10. Implications of the Study

10.1 Theoretical Implications

The study contributes to regional behavioural finance literature by empirically validating the combined influence of five major behavioural biases on investment decision-making within the previously under-researched Saurashtra investor population, extending the applicability of Prospect Theory and related behavioural frameworks to this context.

10.2 Practical Implications

6. Financial advisors can use bias-awareness assessments to identify clients prone to overconfidence and herding, and tailor advisory approaches to counteract impulsive or imitative trading decisions.
7. Investor-education initiatives conducted by SEBI, stock exchanges, and local broking firms may specifically address overconfidence and herding, given their demonstrated dominance as behavioural drivers in this region.
8. Portfolio management services could incorporate structured decision checklists and cooling-off mechanisms to reduce the influence of anchoring and loss aversion on buy-sell decisions.
9. Regulators may consider region-specific investor awareness campaigns that account for local trading culture and risk attitudes rather than adopting a uniform national approach.

11. Limitations of the Study

10. The study relied on convenience sampling restricted to the Saurashtra region, which may limit generalisability to retail investors elsewhere in India.
11. Behavioural constructs were measured through self-reported Likert-scale responses, which may be subject to social desirability bias.

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12. The cross-sectional design captured investor behaviour at a single time point and cannot establish causal directionality between biases and decision-making.
13. The study examined only five behavioural biases; other biases such as regret aversion and confirmation bias were not included within the scope of this research.

12. Scope for Future Research

Future studies may extend this research through a longitudinal design to observe how behavioural biases evolve across different market conditions, including bullish and bearish phases. Comparative studies across multiple regions of Gujarat or India would further validate the regional specificity of these findings. Future research could also examine additional biases such as regret aversion, confirmation bias, and representativeness, and may apply structural equation modelling to explore mediating variables such as financial literacy and investment experience.

13. Conclusion

This study examined the influence of five behavioural biases — overconfidence, herding, anchoring, loss aversion, and mental accounting — on the investment decision-making of 300 retail investors in the Saurashtra region. Multiple regression results confirmed that all five biases significantly and positively influenced investment decision-making, with overconfidence and herding emerging as the dominant predictors. These findings underscore that investment decisions in this region are substantially shaped by psychological and social factors rather than purely rational calculation, offering valuable insights for financial advisors, investor-education bodies, and policymakers seeking to promote more disciplined and informed investment behaviour among retail investors.

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