

BEHAVIOURAL BIASES AND INVESTMENT DECISION-MAKING AMONG RETAIL INVESTORS

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ABSTRACT

This study investigates the influence of behavioural biases on the investment decision-making of retail investors. Drawing on Prospect Theory and the tenets of behavioural finance, the paper examines ten cognitive and emotional biases including overconfidence, loss aversion, herding, anchoring, and the disposition effect and their measurable impact on portfolio performance. Using a structured questionnaire administered to 387 retail investors across equity, mutual fund, and cryptocurrency markets, and employing regression analysis and factor analysis, the study finds that overconfidence ($\beta = 0.412, p < 0.001$) and loss aversion ($\beta = 0.387, p < 0.001$) are the most significant predictors of suboptimal investment outcomes. The combined model explains 61.8% of the variance in investment decision quality ($R^2 = 0.618$). The findings underscore the necessity of investor education programmes, bias-aware financial advisory practices, and the adoption of structured decision-making frameworks to improve retail investor welfare.

Keywords: Behavioural Biases, Retail Investors, Investment Decision-Making, Prospect Theory, Overconfidence, Loss Aversion, Herding, Disposition Effect, Behavioural Finance

1. Introduction

Classical finance theory, anchored in the Efficient Market Hypothesis (EMH) and Expected Utility Theory, presupposes that investors are rational agents

who systematically process all available information to maximise utility. However, decades of empirical evidence have demonstrated that real investors routinely deviate from this rational ideal. The field of behavioural finance, which merges insights from cognitive psychology with financial economics, seeks to explain these systematic deviations and their consequences for market prices and individual wealth. Retail investors individuals who invest personal savings rather than institutional capital are particularly vulnerable to behavioural biases. Unlike professional fund managers who operate under institutional constraints, performance mandates, and peer monitoring, retail investors frequently make decisions in conditions of uncertainty, limited information, and emotional arousal. The proliferation of online trading platforms and mobile investment applications has further lowered barriers to entry, increasing the population of retail investors while simultaneously expanding their exposure to behavioural pitfalls such as overtrading, impulsive reactions to market news, and herd behaviour.

This paper aims to systematically identify the predominant behavioural biases affecting retail investors, quantify their relative impact on investment decision quality, and propose evidence-based interventions. The remainder of the paper is organised as follows: Section 2 reviews the relevant literature; Section 3 presents the conceptual framework; Section 4 describes the methodology; Section 5 discusses findings; Section 6 offers implications; and Section 7 concludes.

2. Literature Review

2.1 Prospect Theory and Loss Aversion

The seminal contribution of Kahneman and Tversky (1979) fundamentally challenged the Expected Utility framework by demonstrating that people evaluate outcomes relative to a reference point and weight losses more heavily than equivalent gains a phenomenon termed loss aversion. Losses are felt approximately twice as acutely as equivalent gains. This asymmetric valuation function produces predictable decision patterns including risk aversion in the domain of gains and risk-seeking behaviour in the domain of losses, with profound implications for portfolio management.

2.2 Overconfidence and Excessive Trading

Overconfidence is one of the most extensively documented biases in financial literature. Barber and Odean (2000), in their landmark study of 66,465 household brokerage accounts, found that excessive trading driven by overconfidence reduced net returns by an average of 6.5% per annum relative to passive strategies. Odean (1998) further documented that investors systematically sell past winners and hold onto past losers — a pattern explained by loss aversion and mental accounting resulting in the disposition effect.

2.3 Herding Behaviour

Herding occurs when investors imitate the actions of the majority rather than acting on independent analysis. Kumar and Lee (2006) demonstrated that retail investors trade in a correlated manner, generating systematic price pressure. Herding is amplified during periods of market stress and is frequently observed in speculative asset markets including technology stocks and cryptocurrencies. Rational herding models suggest that information cascades can make it individually rational to follow the crowd even when private signals indicate otherwise.

2.4 Anchoring and Availability Bias

Anchoring refers to the tendency to rely disproportionately on an initial piece of information when making subsequent judgements. In financial contexts, investors commonly anchor to a stock's 52-week high, initial purchase price, or a round-number price level. Availability bias the tendency to assign higher probability to events that are more easily recalled leads investors to over-weight recent market crashes, media-amplified risks, or locally observed successes, distorting their probability assessments.

Table 1: Summary of Key Literature on Behavioural Biases in Finance

Author(s) & Year	Study Focus	Sample Size	Key Finding
Kahneman & Tversky (1979)	Prospect Theory	Laboratory	Losses loom larger than gains; reference-point dependence

Odean (1998)	Disposition Effect	10,000 accounts	Investors sell winners 50% more often than losers
Barber & Odean (2000)	Overconfidence / Trading	66,465 households	Heavy traders underperform by 6.5% p.a. net of costs
Shiller (2000)	Irrational Exuberance	Market-wide	Psychological factors drive asset-price bubbles
Thaler & Sunstein (2008)	Nudge / Choice Architecture	Policy-level	Default options significantly affect financial decisions
Barberis & Thaler (2003)	Behavioural Finance Survey	Academic review	Limits to arbitrage allow mispricings to persist
Kumar & Lee (2006)	Retail Investor Herding	1.85 M accounts	Retail investors co-move; correlated trading affects prices
Pompian (2012)	Bias Profiling	Client surveys	Biases cluster into 4 investor types; tailored advice improves outcomes

Source: Compiled by the authors from reviewed literature.

3. **Conceptual Framework:**The study adopts a multi-bias framework grounded in Prospect Theory (Kahneman & Tversky, 1979) and the broader literature on heuristics and biases. The independent variables are ten behavioural biases cognitive and emotional while the dependent variable is Investment Decision Quality, operationalized through self-reported measures of portfolio returns relative to benchmark, trading frequency, and decision consistency. The framework postulates that each bias independently and collectively reduces decision quality, and that their effects may be moderated by investor experience and financial literacy. **Table 2: Classification of Behavioural Biases Studied**

Bias	Description	Category	Impact on Returns
Overconfidence	Investors overestimate their knowledge and forecasting ability, trading excessively	Cognitive	Negative
Anchoring	Over-reliance on the first piece of information encountered (e.g., purchase price)	Cognitive	Negative
Herding	Following the crowd instead of conducting independent analysis	Social	Negative
Loss Aversion	Losses feel twice as painful as equivalent gains feel pleasurable	Emotional	Negative
Disposition Effect	Selling winners too early and holding losers too long	Emotional	Negative
Availability Bias	Judging probability based on how easily examples come to mind	Cognitive	Negative
Representativeness	Judging investments based on stereotypes or short track records	Cognitive	Mixed
Mental Accounting	Treating money differently depending on its source or intended use	Cognitive	Mixed
Recency Bias	Over-weighting recent events and extrapolating recent trends	Cognitive	Negative
Status Quo Bias	Preference for the current state over change, leading to inertia	Emotional	Negative

Note: *** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$. IV = Independent Variable. Impact direction based on theoretical and empirical consensus.

4. **Research Methodology:**This study employs a quantitative, cross-sectional research design. Primary data were collected via a structured questionnaire developed from validated scales in the behavioural finance literature, including the Investor Behaviour Scale (IBS) and items adapted from Pompian (2012). The questionnaire comprised 48 items measuring the ten behavioural biases and 12 items measuring investment decision quality. A pilot test ($n = 40$) yielded a Cronbach's Alpha of 0.847, confirming high internal consistency.

Table 3: Research Methodology Summary

Research Parameter	Details
Research Design	Descriptive and analytical quantitative study
Data Collection	Structured questionnaire (Likert-scale, 5-point)
Sample Population	Retail investors in equity, mutual fund & cryptocurrency markets
Sample Size	387 valid responses (from 420 distributed)
Sampling Technique	Stratified random sampling by age, experience & portfolio size
Statistical Tools	Descriptive statistics, Cronbach's Alpha, Regression Analysis, Factor Analysis
Reliability (Alpha)	0.847 (overall scale) — exceeds 0.70 threshold
Software Used	SPSS v26.0 and Microsoft Excel
Study Period	January 2024 – December 2025

Source: Authors' primary research design.

4.1 **Sample Profile:**A stratified random sample of 387 retail investors was drawn from brokerage databases, investment forums, and financial literacy workshops. The sample was stratified by age group, gender, investment experience, and primary market of participation to ensure representativeness. The demographic profile is presented in Table 4 below.

Table 4: Demographic Profile of Respondents (n = 387)

Characteristic	Category	Frequency (n)	Percentage (%)
Age	18 – 30 years	138	35.7
	31 – 45 years	159	41.1
	46 – 60 years	67	17.3
	Above 60 years	23	5.9
Gender	Male	241	62.3
	Female	146	37.7
Investment Experience	Less than 2 years	97	25.1
	2 – 5 years	143	37.0
	6 – 10 years	102	26.4
	More than 10 years	45	11.6
Primary Market	Equities / Stocks	189	48.8
	Mutual Funds	112	28.9
	Cryptocurrency	56	14.5
	Bonds / Fixed Income	30	7.8

Source: Primary data collected by authors (2023).

5. Findings and Discussion

5.1 **Descriptive Analysis:**Descriptive analysis revealed that overconfidence was the most prevalent bias, with 74.3% of respondents reporting that they believe their stock-picking ability is above average an arithmetically impossible belief for the majority. Loss aversion was confirmed in 68.2% of respondents, who reported

holding loss-making positions for significantly longer than profitable ones. Herding was evident in 61.4% of participants, particularly among younger investors (18–30 age group) who cited social media as their primary source of investment ideas.

5.2 Regression Analysis: Multiple regression analysis was conducted with Investment Decision Quality as the dependent variable and the eight significant biases as independent variables. All Variance Inflation Factor (VIF) scores were below 3.0, confirming the absence of multicollinearity. The model was statistically significant ($F = 77.43$, $p < 0.001$) and explained 61.8% of variance in investment decision quality ($R^2 = 0.618$). The standardised regression coefficients are presented in Table 5.

Table 5: Multiple Regression Results Predictors of Investment Decision Quality

Behavioural Bias (IV)	Beta (β)	Std. Error	t-value	Significance (p)
Overconfidence Bias	0.412	0.058	7.103	0.000 ***
Loss Aversion	0.387	0.063	6.143	0.000 ***
Herding Behaviour	0.341	0.071	4.803	0.000 ***
Anchoring Bias	0.298	0.067	4.448	0.000 ***
Disposition Effect	0.276	0.072	3.833	0.001 **
Availability Bias	0.231	0.069	3.348	0.001 **
Recency Bias	0.194	0.074	2.621	0.009 **
Mental Accounting	0.162	0.077	2.104	0.036 *
$R^2 = 0.618$ Adj. $R^2 = 0.609$ $F = 77.43$ $p < 0.001$				

Note: Dependent variable = Investment Decision Quality. *** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$. Standardised Beta coefficients reported.

5.3 Discussion of Key Biases

Overconfidence emerged as the strongest predictor ($\beta = 0.412$), consistent with Barber and Odean's (2000) findings. Overconfident investors in our sample traded 3.7 times more frequently than self-identified cautious investors, while achieving lower risk-adjusted returns. Loss aversion ($\beta = 0.387$) was the second strongest predictor, producing the disposition effect in 58.1% of respondents who held losing positions an average of 14.3 months longer than winning positions.

Herding behaviour ($\beta = 0.341$) was strongly associated with cryptocurrency investment, where 72% of cryptocurrency investors admitted to buying an asset primarily because it was trending on social media. Anchoring ($\beta = 0.298$) was prevalent among more experienced investors who anchored to historical price highs, refusing to sell overvalued positions. Mental accounting showed the weakest but still significant effect ($\beta = 0.162$), with investors treating 'windfall gains' from dividends differently from regular capital a pattern consistent with Thaler's (1985) theoretical predictions.

6. Implications for Practice and Policy

The findings carry significant implications for financial advisors, investment platforms, and regulatory bodies. Three categories of intervention are proposed:

1. Investor Education: Structured financial literacy programmes that incorporate bias recognition exercises, simulated portfolio decisions, and feedback mechanisms can materially reduce the frequency of biased decisions, particularly among novice investors.
2. Nudge Architecture: Investment platforms should implement choice architecture tools such as cooling-off periods before large trades, loss-aversion notifications, and automated diversification prompts to counteract known biases at the point of decision.
3. Bias-Aware Advisory Practice: Financial advisors should conduct behavioural profiling of clients, identifying their dominant bias cluster (as proposed by Pompian, 2012), and adapt communication strategies accordingly emphasising long-term outcomes for loss-averse clients and providing external accountability structures for overconfident ones.

7. Conclusion

This study provides robust empirical evidence that behavioural biases systematically undermine the investment decision-making of retail investors. Overconfidence and loss aversion were identified as the most impactful biases, collectively accounting for a substantial proportion of the explained variance in investment decision quality. The findings validate the predictions of Prospect Theory and extend the behavioural finance literature to emerging investment contexts, including digital asset markets.

As retail investor participation continues to grow globally accelerated by commission-free platforms and social investing communities the social and economic costs of unchecked behavioural biases are likely to intensify. Future research should examine the long-term effectiveness of debiasing interventions, explore cross-cultural differences in bias prevalence, and investigate the role of algorithmic financial advice (robo-advisors) in mitigating or exacerbating these biases.

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