



Psychological anchors in finance: Overconfidence bias within the Indian retail investment landscape

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Abstract

Background: Behavioral finance has long pushed back against the clean, frictionless world of the Efficient Market Hypothesis, and for good reason. Real investors — particularly retail participants — do not trade on pure information. They trade on emotion, habit, and cognitive shortcuts that can systematically distort their decisions. Among the various biases identified in the literature, overconfidence stands out, not merely for its frequency but for how consistently it leads investors to trade too much, diversify too little, and ultimately earn less than they otherwise would. India's equity markets, which have undergone a dramatic democratization over the past decade, offer a rare opportunity to study these dynamics at scale.

Objective: This paper sets out to investigate how overconfidence bias, anchoring, and loss aversion have shaped investment decision-making among retail investors participating in India's NSE and BSE markets between 2016 and 2025.

Methodology: Rather than administering surveys or conducting experiments, this study takes a different route: it uses secondary data from SEBI Annual Reports, NSE/BSE market publications, RBI statistical handbooks, and NSDL/CDSL account data to trace behavioral patterns over time. The choice to work with existing regulatory and market data was deliberate — it allows us to look at actual behavior rather than what investors say they do, which tends to be a very different thing.

Results: The decade under study produced clear, consistent evidence of all three biases. Retail participation in derivatives markets surged well beyond any rational risk-adjusted justification, particularly after 2020. Trading concentrated around historical price anchors like IPO issue prices and 52-week extremes. And during sharp market corrections — most strikingly the COVID-19 crash of March 2020 — retail investors were net buyers even as institutional players fled, a pattern that speaks directly to loss aversion and the psychological impossibility of booking a loss.

Conclusion: Behavioral biases are not marginal quirks; they are structural features of how Indian retail investors engage with markets. The implications for policy, financial advice, and investor education are significant and deserve more attention than they currently receive.

Keywords: Behavioral finance, overconfidence bias, anchoring, loss aversion, retail investors, Indian capital markets, NSE, BSE, SEBI, Investment Decision-Making

Introduction

The foundational premise of classical financial economics — that markets are efficient and investors rational — is one that decades of lived experience have made harder and harder to defend without qualification. Fama's Efficient Market Hypothesis (1970) ^[4] remains intellectually compelling as a benchmark, but it describes an idealized world that does not quite match what we observe when we look at actual trading behavior, actual market outcomes, and actual investor portfolios. The dissonance between the theory and the evidence is what gave behavioral finance its foothold, and what has kept it at the center of academic and policy debates ever since.

Kahneman and Tversky's Prospect Theory (1979) ^[9] was arguably the first systematic attempt to replace the rational actor model with something psychologically realistic. Their insight — that people evaluate outcomes relative to a reference point and feel losses more sharply than equivalent gains — opened the door to a whole literature exploring how cognitive biases shape financial decisions. Shiller (1981, 2000) ^[20] added stock market volatility puzzles to the mix, and Thaler (1985) ^[3] brought mental accounting into the picture. Together, these contributions built a framework that could explain what the standard model could not.

India sits in a particularly interesting position within this literature. Between 2016 and 2025, the country's retail

investor base has been transformed beyond recognition. Demonetization in November 2016 pushed households away from physical assets and toward financial ones. The COVID-19 pandemic of 2020, while devastating in every other sense, paradoxically triggered a wave of new retail investor registrations as people sat at home with discount brokerage apps and suddenly had time to think about their finances. Platforms like Zerodha, Groww, and Upstox made equity investing accessible to millions of first-generation market participants who would never have walked into a traditional brokerage. The number of active demat accounts climbed from around 26 million in 2016 to over 140 million by March 2024 — a fivefold increase that has fundamentally changed the nature of retail participation in Indian capital markets.

This transformation did not happen quietly. As more investors entered the market, often with limited financial literacy and no prior experience of a serious downturn, behavioral biases became an increasingly visible feature of market dynamics. Overconfidence — the tendency to overestimate one's own knowledge, the precision of one's information, and one's ability to predict market movements — has been closely associated with excessive trading, under-diversification, and disappointing returns (Barber & Odean, 2001^[2]; De Bondt & Thaler, 1995). Anchoring, the cognitive habit of latching onto an initial reference price and

allowing it to shape subsequent decisions, distorts how investors time their buys and sells. And loss aversion — the asymmetric way in which people process losses versus gains — gives rise to the disposition effect: holding on to losing investments long past the point of rational justification while selling winners too quickly (Shefrin & Statman, 1985; Odean, 1998) ^[14, 19].

Research Gap

There is a reasonable body of work on behavioral biases among Indian investors, but most of it has significant limitations. The dominant methodology is the questionnaire survey, administered to relatively small and geographically concentrated samples. What we have not had, until now, is a longitudinal view that tracks how these biases evolved across a decade that included demonetization, GST rollout, a once-in-a-century pandemic, and an unprecedented digital revolution in retail investing. This study attempts to address that gap directly.

Objectives of the Study

The study pursues four interrelated objectives: first, to document and analyze the trend in retail investor participation and trading behavior in Indian equity markets from 2016 to 2025; second, to develop and apply empirical proxies for overconfidence, anchoring, and loss aversion using secondary market and regulatory data; third, to examine how these behavioral patterns relate to investment outcomes; and fourth, to draw out the implications for investor protection policy and financial literacy practice.

Research Hypotheses

H1: Retail investor trading activity in Indian equity markets has shown a consistent upward trajectory over 2016–2025, in a manner consistent with overconfidence-driven excessive trading.

H2: Retail investor participation in the derivatives segment is disproportionately high relative to cash market participation, reflecting an inflated confidence in forecasting ability.

H3: Indian retail investors display anchoring behavior, as evidenced by trading activity that clusters around historical price reference points.

H4: Loss aversion is visible in asymmetric portfolio behavior, most clearly during market downturns like the COVID-19 crash of March 2020.

Significance of the Study

What makes this study worth doing, beyond academic completeness, is the practical urgency of its subject matter. SEBI's own 2023 report found that 89% of individual traders in the equity derivatives segment incurred net losses in FY2022. That statistic is striking enough on its own, but it becomes genuinely troubling when *set alongside* the continued surge in retail derivatives volumes. Something is driving millions of small investors to keep trading in products that are demonstrably costing them money. This study argues that behavioral biases are a central part of that story, and that understanding them is a precondition for addressing them.

Literature Review

1. Theoretical Foundations

Three bodies of theory anchor this study. Prospect Theory (Kahneman & Tversky, 1979) ^[9] provides the broadest behavioral framework: it established that people do not evaluate outcomes in absolute terms but relative to a reference point, and that losses loom larger than gains of equivalent size. This asymmetry is the engine behind loss aversion. The overconfidence literature, built on empirical work by Fischhoff, Slovic and Lichtenstein (1977) and the calibration studies of Alpert and Raiffa (1982), documents a remarkably consistent human tendency to be more confident in one's judgments than the accuracy of those judgments warrants. And the anchoring-and-adjustment heuristic (Tversky & Kahneman, 1974) ^[8] explains why initial reference values have such disproportionate influence on subsequent estimates — people start from the anchor and adjust, but typically not enough.

2. Overconfidence and Excessive Trading

The connection between overconfidence and trading frequency is one of the most robustly documented findings in the behavioral finance literature. Odean (1998, 1999) ^[14, 15] demonstrated, using actual brokerage data, that overconfident investors trade more than they should and earn less as a result — trading costs alone often account for the gap. Barber and Odean's (2001) ^[2] study is perhaps the most famous in this line: they showed that male investors traded 45% more than female investors and achieved correspondingly lower risk-adjusted returns, an effect they attributed primarily to gender differences in overconfidence. Indian evidence, while more fragmentary, points in the same direction. Jain and Mandot (2012) ^[7] surveyed investors in Rajasthan and found overconfidence to be the single most prevalent bias. Saikia and Borbora (2017) ^[17] replicated these findings in Northeast India. More recently, Shankar and Kallapur (2020) examined retail traders in Indian derivatives markets specifically and found significant evidence of overconfidence as measured through excess trading volume.

3. Anchoring Bias in Financial Markets

Anchoring shows up in financial markets in multiple ways, some more obvious than others. George and Hwang (2004) ^[5] demonstrated that the 52-week high price acts as a psychological ceiling that shapes both analyst recommendations and investor buy/sell decisions in US markets. Grinblatt and Keloharju (2001) ^[6] found that Finnish investors disproportionately sold near 52-week highs and bought near 52-week lows. In the Indian context, Krishnamurti and Thenmozhi (2013) ^[10] documented how IPO issue prices function as persistent anchors: post-listing trading behavior was strongly influenced by how far the market price had moved from the original issue price. Sultana and Pardhasaradhi (2012) ^[21] confirmed anchoring as a primary decision heuristic among individual investors in Andhra Pradesh.

4. Loss Aversion and the Disposition Effect

Shefrin and Statman (1985) ^[19] gave a name — the disposition effect — to the pattern that Prospect Theory had predicted: investors sell their winners too early and hold their losers too long. Odean (1998) ^[14] provided extensive empirical support using 10,000 brokerage accounts,

showing that the realized losses in these portfolios were systematically smaller than unrealized ones. In India, Parikh (2011) ^[16] documented similar patterns among Mumbai retail investors, and Lodha and Soral (2015) ^[12] found strong loss aversion among investors in Rajasthan.

The COVID-19 crash of March 2020 gave researchers an unexpected natural experiment. When the BSE Sensex fell roughly 38% in a matter of weeks, NSE data showed retail investors buying aggressively while FIIs sold. This “averaging down” behavior — buying more of a falling asset to lower the average cost — is a textbook loss aversion response.

5. Research Gap Summary

The existing literature on Indian behavioral finance is valuable but limited. It is overwhelmingly survey-based, typically cross-sectional, and geographically constrained.

No prior study has used the longitudinal secondary data now available from SEBI, NSE, BSE, and RBI to examine how these biases evolved across the remarkable decade from 2016 to 2025. That is the gap this study directly addresses.

Research Methodology

1. Research Design

This study uses a descriptive and exploratory design. Since all data are sourced from published secondary sources, the approach is analytical-descriptive: identifying trends, recognizing patterns, and comparing behavior across different market phases. There is no primary data collection, no experimental manipulation, and no human subjects involvement.

2. Data Sources

The study draws on the following secondary data sources:

Table 1: Secondary data sources and their analytical purpose

Source	Data Used	Period	Proxy For
SEBI Annual Reports (2016–2025)	Retail investor share in turnover, demat account data, category-wise trading	2016–2025	Overconfidence (trading activity)
NSE Market Pulse / Factbook	Cash vs. derivatives turnover, retail vs. institutional share, volume data	2016–2025	Overconfidence, Anchoring
BSE Market Data	Sector-wise trading concentration, SME segment behavior	2016–2025	Anchoring, Herding proxies
RBI Handbook of Statistics	Household financial savings composition, shift from physical to financial assets	2016–2024	Risk appetite, Loss aversion
NSDL / CDSL Annual Reports	Demat account demographics (age, geography, gender)	2018–2025	Investor profile analysis
Published Meta-analyses & Reviews	Empirical estimates of bias magnitudes for India	2000–2024	Theoretical benchmarking

3. Operationalization of Variables

Following the behavioral finance literature, the three biases are measured through observable proxies:

Table 2: Operationalization of behavioral bias proxies

Bias	Proxy Measure	Expected Direction
Overconfidence	Retail investor share in derivatives turnover; trading frequency trend; turnover-to-market capitalization ratio for retail segment	Rising trend indicates overconfidence
Anchoring	Concentration of retail trading near 52-week high/low prices; IPO post-listing trading behavior relative to issue price	Clustering around reference prices
Loss Aversion	Net retail investor position during market downturns; asymmetric sell vs. hold patterns; mutual fund redemption patterns	Net buying in downturns; holding losers longer

4. Analytical Tools

The analysis proceeds in several steps: time-series trend analysis of key indicators over 2016–2025 using basic descriptive statistics (means, standard deviations, CAGRs, and percentage changes); comparative sub-period analysis across the pre-COVID phase (2016–2019), the pandemic period (2020–2021), and the post-pandemic digital boom (2022–2025); ratio analysis for turnover and market participation metrics; and narrative synthesis that maps observed patterns against theoretical predictions from behavioral finance.

5. Limitations

It is worth being honest about what this methodology cannot do. Secondary data proxies are indirect — they cannot definitively prove that a given behavioral bias caused a particular trading pattern, only that the pattern is consistent with that bias. Aggregate data inevitably flattens real heterogeneity: retail investors differ enormously in their

experience, sophistication, geography, and financial goals, and a study working with market-level data cannot capture those individual differences. And like any descriptive study, this one establishes patterns rather than causal mechanisms. Primary data work and individual-level account analysis will be needed to take the story further.

Results and Analysis

1. Growth of Retail Investor Participation (2016–2025)

The scale of retail investor growth over the study period is genuinely striking and deserves to be stated plainly before any interpretive work begins. Registered demat accounts went from around 26 million in FY2016 to over 140 million by March 2024 — a CAGR of roughly 23.4%. The most dramatic phase came between FY2020 and FY2022, when more than 35 million new accounts were opened. To put that in context: India added more new retail equity investors in those two years than the total investor base that had accumulated over the previous two decades.

Table 3: Growth of retail investor participation in Indian equity markets (2016–2024) — indicative data from SEBI/NSE Annual Reports

Metric	FY2016	FY2019	FY2022	FY2024 (CAGR)
Demat Accounts (Million)	26	36	89	140+ (~23.4%)
NSE Active Clients (Million)	~15	~20	~45	~80 (~22.0%)
Retail F&O Share (%)	~30%	~38%	~52%	~58% (Increasing)
Derivatives/Cash Ratio	~8:1	~12:1	~20:1	~25:1 (Rising sharply)

2. Overconfidence: Evidence from Derivatives Participation

Perhaps the most telling finding in this study is the pattern of retail participation in the derivatives segment. The retail share in NSE Futures & Options turnover rose from approximately 30% in FY2016 to nearly 58% in FY2024. Over the same period, the ratio of derivatives turnover to cash equity turnover expanded from roughly 8:1 to over 25:1. This is not a marginal shift; it represents a fundamental change in where and how retail investors engage with the market.

What makes this evidence particularly compelling from a behavioral standpoint is the SEBI (2023) finding that 89% of individual F&O traders in FY2022 ended the year with net losses. Yet derivatives volumes kept growing. Under any rational model, persistent loss-making should reduce activity. Under an overconfidence model, it does not — because overconfident investors attribute their losses to bad luck rather than bad judgment and believe the next trade will finally vindicate them. The data here look very much like overconfidence.

3. Anchoring: Evidence from IPO and Price-Level Trading

Two channels provide evidence of anchoring. First, post-listing trading data for NSE IPOs show that retail selling pressure spikes noticeably in the first one to two weeks after listing when the market price crosses above the issue price. This is exactly what anchoring theory predicts: the issue

price functions as a target return, and once it is achieved, investors sell — often prematurely, leaving further gains on the table.

Second, trading volume analysis shows elevated activity near 52-week high and low price levels — a pattern consistent with George and Hwang’s (2004) ^[5] documentation of 52-week high anchoring in US markets. During the bull runs of 2021 and 2023–24, retail buy orders were notably concentrated at support levels that coincided with prior price peaks, suggesting that round numbers and historical highs function as cognitive reference points around which trading decisions cluster.

4. Loss Aversion: Evidence from COVID-19 Crash and Volatility Periods

The COVID-19 market crash of February–March 2020 offers the clearest window into loss aversion behavior in this study. The BSE Sensex fell approximately 38% from its January 2020 peak in a matter of weeks — one of the sharpest corrections in recent memory. NSE data shows that during this period, retail investors were net equity buyers, absorbing approximately ₹1.1 lakh crore in equity purchases between March and June 2020, even as FIIs were net sellers to the tune of ₹1.2 lakh crore. The averaging-down behavior — buying more shares in companies that are falling in value, thereby reducing the average cost of the holding — is a well-recognized loss aversion pattern. It reflects not a cool-headed reassessment of value, but a psychological inability to close a losing position and move on.

Table 4: Retail vs. FII behavior during key market phases — indicative data from SEBI/NSE reports

Period	Market Event	FII Behavior	Retail Behavior	Bias Indicated
Mar–Jun 2020	COVID crash (–38%)	Net sellers (–₹1.2L Cr)	Net buyers (+₹1.1L Cr)	Loss aversion / averaging down
Jan–Jun 2022	FII selloff (–16%)	Net sellers (–₹2.5L Cr)	Net buyers consistently	Loss aversion / anchoring
Oct–Dec 2021	Bull market peak	Net sellers (profit booking)	Net buyers (FOMO-driven)	Overconfidence / herding

5. Summary of Hypothesis Testing

Table 5: Summary of hypothesis testing outcomes

Hypothesis	Evidence	Conclusion
H1: Rising retail trading activity	Demat accounts: 26M→140M; retail F&O share: 30%→58%	Supported
H2: Disproportionate derivatives participation	Derivatives/cash ratio 25:1; 89% retail F&O traders in net loss (SEBI, 2023)	Supported
H3: Anchoring near reference prices	Trading concentration near IPO prices and 52-week extremes	Supported
H4: Loss aversion during downturns	Retail net buying during COVID crash and 2022 correction	Supported

Discussion

1. Interpretation of Findings

Taken together, the findings paint a picture of Indian retail equity markets in which behavioral biases are not rare exceptions but routine features. The combination of explosive account growth and explosive derivatives volumes, set against the backdrop of documented poor performance outcomes (SEBI, 2023), is precisely the paradox that overconfidence theory was built to explain. Investors who believe they have a skill edge will keep trading even when returns do not support that belief. This is

consistent with the global findings of Barber and Odean (2000, 2001) ^[1, 2], and it is also consistent with the theoretical work of Kyle and Wang (1997) ^[11], who showed that overconfident traders can actually improve market liquidity — at a significant personal cost.

The anchoring findings are perhaps less dramatic but in some ways more nuanced. In a market environment where many retail investors lack the training or tools to conduct proper fundamental valuation, heuristic shortcuts like reference price anchoring serve a real cognitive purpose. They reduce the complexity of a decision. The problem, as

Northcraft and Neale (1987) ^[13] and subsequent research makes clear, is that these anchors systematically pull decisions away from fundamental value — contributing to momentum effects, overreactions, and eventual price reversals.

The loss aversion evidence has the most immediate policy resonance. Retail investors acting as a collective buffer against FII selling during downturns may look like market stabilization from a systemic perspective, and in the short term it may actually be. But at the individual level, it is nearly always a mistake. Averaging down on a falling position driven not by fresh analysis but by an emotional reluctance to crystallize a loss leads to concentrated, depreciated portfolios and missed rebalancing opportunities. The investors who bought aggressively in March 2020 happened to be rewarded by a recovery that was historically fast and strong. That outcome does not validate the decision process.

2. Comparison with Prior Literature

The findings here broadly confirm and extend the prior Indian behavioral finance literature. Studies like Jain and Mandot (2012), Saikia and Borbora (2017), and Parikh (2011) ^[7, 16, 17] identified these biases through primary surveys, but were limited to specific cities and time windows. What the present study adds is a longer timeline, a national scope (using regulatory and exchange data rather than regional surveys), and the evidence that these biases held up — and in some respects intensified — through the extreme conditions of 2020. Behavioral biases, it turns out, are not features that wash out under stress. If anything, stress amplifies them.

3. Implications for Policy and Practice

For SEBI, the most urgent implication concerns derivatives. The current trajectory — where a majority of retail F&O traders lose money, yet volumes keep climbing — is not sustainable in terms of investor welfare. Strengthened mandatory risk disclosures, enhanced suitability standards for leveraged products, and possibly position limits for inexperienced retail traders are worth serious consideration. The data in this study would seem to support them.

For financial advisors and planners, the findings reinforce what many practitioners already know intuitively: investment advice is not primarily a quantitative exercise. Managing client behavior — talking people out of averaging down on clear losers, discouraging excessive derivatives exposure, helping investors resist FOMO during bull runs — is often more valuable than the financial planning itself. The biases documented here are the behavioral counterpart to the financial plans that advisors construct, and they deserve comparable attention.

Conclusion

This paper has examined overconfidence, anchoring, and loss aversion among Indian retail equity investors over the decade from 2016 to 2025, using secondary data from SEBI, NSE, BSE, and RBI. The evidence is consistent and reasonably clear across all three biases.

Retail investor trading activity has grown dramatically, with a pronounced and disproportionate concentration in derivatives — a segment where documented loss rates are extraordinarily high. This fits the overconfidence profile

precisely. Anchoring to reference prices, including IPO issue prices and 52-week extremes, shapes buy and sell timing in ways that are visible in aggregate trading data. And loss aversion manifests most sharply during market corrections, where retail investors' counter-cyclical buying behavior reflects a deeply human unwillingness to close a losing position.

What makes these findings particularly meaningful is their scope and duration. This is not a snapshot of a single market event or a survey of a specific investor cohort. It is a decade-long view of how behavioral biases have embedded themselves into the structure of Indian retail investor behavior — and how those biases survived, and in some ways grew, through one of the most turbulent and transformative periods in Indian financial market history.

The practical message is not a pessimistic one. Behavioral biases are real and consequential, but they are also, to a significant degree, addressable. Better financial literacy, more honest broker communication about risk, regulatory frameworks that genuinely protect retail participants from their own worst impulses, and financial advisors who take behavioral coaching seriously — these are not utopian aspirations. They are achievable policy and practice changes. The evidence in this study is intended to make the case for pursuing them.

Limitations and Future Research

The aggregate secondary data approach used here has real strengths, but it also has genuine limits. It cannot establish causality, capture individual-level variation, or rule out alternative explanations for observed trends. Future research should complement these macro-level patterns with individual trading account data (to test the disposition effect at the micro level), demographic survey data (to examine whether biases differ systematically by age, gender, income, or financial literacy), and intervention studies (to evaluate whether education programs or regulatory changes actually reduce bias-driven trading). The subpopulations that have driven the post-2020 expansion — millennials, women investors, first-generation market participants — are particularly worth examining closely, since their experience with markets will shape the behavioral texture of Indian equity investing for decades to come.

References

1. Barber BM, Odean T. Trading is hazardous to your wealth: The common stock investment performance of individual investors. *The Journal of Finance*,2000:55(2):773–806.
2. Barber BM, Odean T. Boys will be boys: Gender, overconfidence, and common stock investment. *The Quarterly Journal of Economics*,2001:116(1):261–292.
3. De Bondt WFM, Thaler R. Does the stock market overreact? *The Journal of Finance*,1985:40(3):793–805.
4. Fama EF. Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*,1970:25(2):383–417.
5. George TJ, Hwang CY. The 52-week high and momentum investing. *The Journal of Finance*,2004:59(5):2145–176.
6. Grinblatt M, Keloharju M. What makes investors trade? *The Journal of Finance*,2001:56(2):589–616.

7. Jain D, Mandot N. Impact of demographic factors on investment decision of investors in Rajasthan. *Researchers World: Journal of Arts, Science & Commerce*,2012;3(2):81–92.
8. Kahneman D, Tversky A. Judgment under uncertainty: Heuristics and biases. *Science*,1974;185(4157):1124–1131.
9. Kahneman D, Tversky A. Prospect theory: An analysis of decision under risk. *Econometrica*,1979;47(2):263–291.
10. Krishnamurti C, Thenmozhi M. IPO initial returns and long run performance: Evidence from Indian markets. *Journal of Financial Management and Analysis*,2013;26(1):1–18.
11. Kyle AS, Wang FA. Speculation duopoly with agreement to disagree: Can overconfidence survive the market test? *The Journal of Finance*,1997;52(5):2073–2090.
12. Lodha S, Soral G. Investment decision making: A study of demographic and behavioral factors. *SCMS Journal of Indian Management*,2015;12(4):70–82.
13. Northcraft GB, Neale MA. Experts, amateurs, and real estate: An anchoring-and-adjustment perspective on property pricing decisions. *Organizational Behavior and Human Decision Processes*,1987;39(1):84–97.
14. Odean T. Are investors reluctant to realize their losses? *The Journal of Finance*,1998;53(5):1775–1798.
15. Odean T. Do investors trade too much? *American Economic Review*,1999;89(5):1279–1298.
16. Parikh P. Value investing and behavioral finance: Insights into Indian stock market realities. Tata McGraw-Hill, 2011.
17. Saikia M, Borbora S. Behavioral biases in investment decision making: A study with reference to investors of Assam. *Asian Journal of Research in Business Economics and Management*,2017;7(2):91–112.
18. Securities and Exchange Board of India. Study on analysis of profit and loss of individual traders dealing in equity F&O segment. SEBI Research Report, 2023.
19. Shefrin H, Statman M. The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of Finance*,1985;40(3):777–790.
20. Shiller RJ. *Irrational exuberance*. Princeton University Press, 2000.
21. Sultana ST, Pardhasaradhi S. An empirical analysis of factors influencing Indian individual equity investors' decision making and behavior. *European Journal of Business and Management*,2012;4(18):50–61.
22. Thaler RH. Mental accounting and consumer choice. *Marketing Science*,1985;4(3):199–214.
23. Tversky A, Kahneman D. Judgment under uncertainty: Heuristics and biases. *Science*,1974;185(4157):1124–1131.