A Study of Investor Psychology and Its Effect on Financial Decision Making.

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Abstract: This paper examines how behavioural biases shape Indian retail investment decisions. Classical finance assumes rational markets, but actual investor behavior often reflects psychological influences. We conducted an online survey of 54 Indian retail investors (mostly age 22–25, ~85% students) to probe three biases: overconfidence, herding, and loss aversion. Key findings include that 68.5% of respondents rated themselves as highly confident, and 74.1% reported avoiding investing in falling markets. One-sample proportion z-tests show the proportions expressing overconfidence ($z\approx2.72$, $p\approx0.007$) and loss-averse tendencies ($z\approx3.54$, $p<0.001$) are significantly above 50%, whereas the reported herding rate (~52%) does not differ from chance ($p\approx0.79$). In cross-tabulations, overconfidence varies by gender ($\chi^2\approx4.43$, $p=0.035$) and loss aversion by occupation ($\chi^2\approx12.05$, $p=0.002$). These results align with prior findings that Indian investors are prone to psychological biases. We interpret that many novice Indian investors exhibit excessive confidence and tend to follow market trends, which can lead to over-trading and market bubbles. We suggest that financial education and advisor tools (e.g. robo-advisory, decision rules) be used to counteract these biases. Overall, our study links empirical survey evidence to behavioural finance theory in the Indian context, supporting the view that acknowledging and mitigating biases can improve investment outcomes.

Keywords: behavioural finance; overconfidence; herd behaviour; loss aversion; Indian retail investors; investment decisions

Introduction

Traditional finance models (e.g. the Efficient Market Hypothesis) assume that investors are fully rational and markets instantaneously reflect all available information. In reality, however, human psychology significantly affects markets. Decades of research (Kahneman & Tversky 1979) show that investors often deviate from strict rationality, exhibiting cognitive biases. For instance, overconfidence leads people to overestimate their knowledge and underplay risks, while herd behaviour causes individuals to mimic the crowd. Likewise, loss aversion (prospect theory) means losses hurt more than equal gains feel good. These biases help explain phenomena such as market bubbles, crashes, and excessive volatility that cannot be accounted for by models of purely rational actors.

Understanding investor psychology is especially important in India's booming markets. India's economy has grown rapidly, becoming the world's fifth-largest, and retail participation has surged. One report notes unique retail trading accounts tripled to over 130 million in just a few years. Many of these new investors lack formal finance training, making them susceptible to emotional decision-making. Empirical evidence suggests Indian retail investors do display biases like herding and overconfidence. For example, Aggarwal (2021) found Indian retail traders are influenced by "fear and greed" and cognitive biases. Nevertheless, behavioural finance research in India is still limited.

This study addresses that gap by empirically examining whether Indian retail investors exhibit key biases in practice. Through a structured survey and statistical analysis, we identify the prevalence of overconfidence, herd behaviour, and loss aversion among respondents. We then discuss how these biases may manifest in trading patterns. Ultimately, the aim is to understand how investor psychology might lead to suboptimal decisions, and to suggest ways (financial education, advisory practices) to mitigate bias. By linking primary data with behavioural theory, we seek to bridge the gap between classical finance assumptions and actual investor behaviour in India.

Review of Literature

Behavioural finance integrates psychology into economics to explain why actual investor choices deviate from the classical rational model. Traditional models assume fully rational agents, but real markets repeatedly exhibit predictable biases in decision-

making. Below we summarize key biases, drawing on recent research.

Overconfidence Bias: Overconfident investors overestimate their knowledge or skill. They believe they can "beat the market" and therefore trade more frequently. As one systematic review notes, "overconfidence is a form of cognitive bias in which an investor places greater emphasis on his or her knowledge, intuition, or strategy than is warranted". Empirically, overconfident traders often ignore risks and trade excessively. For example, Malik et al. (2024) report that overconfident investors "trade more frequently" and incur higher costs, which can lower returns. Overconfidence can also lead investors to under-diversify portfolios and to discount contrary information. In emerging markets with many novice participants (like India), such overconfidence is especially prevalent.

Recent studies on Indian investors confirm this pattern. Aggarwal (2021) reports that Indian retail investors exhibit strong self-confidence and other biases. Similarly, Agarwal et al. (2025) analyze a large sample of Indian respondents and include overconfidence among the most important biases examined. Their findings suggest Indian investors frequently overestimate their own decision-making ability.

Herd Behaviour: Herding occurs when investors follow the actions of the majority rather than their own analysis. In finance, this means buying assets because others are buying, or selling when others sell. Behavioral studies emphasize that herding "can drive market trends and create bubbles or crashes" as investors imitate the crowd. For instance, Zafar et al. (2024) show that herding leads to suboptimal performance and contributes to overpricing in booms and panic selling in busts. Herding is often driven by social cues (media, tips, peer advice) in uncertain markets.

In the Indian context, social trading cues are common. Many new investors use WhatsApp groups or social media channels for tips, leading to herd-like behavior. Sandeep Aggarwal (2021) finds Indian retail traders frequently display herding tendencies among other biases. Abhilasha Agarwal et al. (2025) likewise include herding in their study of Indian investors, noting it as one of the key biases influencing decisions. These studies suggest herd behaviour remains a significant issue in India, reinforcing anecdotal evidence of tip-driven trades and crowd-following.

Loss Aversion: Prospect theory posits that people feel losses more acutely than gains. In practical terms, losing ₹100 feels worse than gaining ₹100 feels good. This loss aversion leads to reluctance to realize losses: investors may hold losing stocks too long, hoping to break even, and sell winning stocks too early (the disposition effect). A concise formulation is that "loss aversion is the theoretical foundation for prospect theory, which explains why people react more strongly to losses than gains of equal magnitude".

Many investors thus avoid taking losses, potentially impairing long-term returns. In formal terms, loss aversion predicts risk-averse behavior as markets fall and a tendency to "buy the dip" less often. Indian studies also report loss-averse patterns. Aggarwal (2021) notes loss aversion among Indian traders. Overall, loss aversion is a central concept in behavioral finance explaining why investors might do things like hold losers too long.

Other Biases: Behavioral finance identifies many other biases. For example, anchoring leads investors to fixate on a reference price even as new information arrives. Mental accounting causes money to be treated differently based on its source. While these effects are documented (e.g. investors anchored to initial stock quotes), they are beyond our survey's focus. We note them for completeness but do not test them here.

Biases in Indian Investors: A number of recent Indian studies support the prevalence of these biases among retail traders. For instance, Aggarwal (2021) finds Indian investors driven by "fear and greed" and susceptible to many biases (herding, overconfidence, disposition effect, etc.). Another survey (Agarwal et al., 2025) similarly reports that even financially educated Indian investors can exhibit overconfidence and herding. International reviews also emphasize that emerging-market investors (including South Asians) tend to show these familiar biases. In sum, while traditional models remain useful baselines, accounting for behavioural factors is essential. Our study builds on this literature by testing whether these biases manifest significantly in our Indian retail sample.

Problem Definition

Financial theory's assumption of rational, fully informed investors often clashes with observed

behavior. In practice—especially among novice retail investors—decisions are shaped by cognitive biases and emotions. In India's rapidly expanding markets, this raises questions: How common are behavioural biases like overconfidence, herd mentality, and loss aversion in individual investors' decisions? If prevalent, these biases can produce suboptimal outcomes such as excessive trading, market mispricings, and vulnerability to bubbles or crashes.

Despite global evidence for such biases, empirical research in India is still sparse. Many existing studies are anecdotal or limited in scope. Thus, we define the problem as understanding whether Indian retail investors act like the "perfectly rational" agents of classical finance or whether behavioural insights better explain their patterns. This has practical importance: if biases prevail, then financial educators, advisors, and regulators must adapt strategies to improve investor welfare and market efficiency.

Objectives of the Study

- Identify prevalent behavioural biases: Detect whether Indian retail investors exhibit common biases (specifically overconfidence, herding, and loss aversion) based on their survey responses.
- Quantify biases and test hypotheses: Measure how strongly each bias manifests in the sample using descriptive statistics and inferential tests (e.g., one-sample proportion z-tests). Specifically, test whether the proportion of investors showing each bias is significantly above 50%.

Research Methodology

We used a quantitative survey and statistical analysis. A structured questionnaire was distributed online in January 2026 to a convenience sample of Indian retail investors. After cleaning, 54 complete responses were analyzed. The sample skews young (majority aged 22–25) and educated (about 85% students); 63% of respondents were male. These demographics should be kept in mind when generalizing.

Survey Instrument: The questionnaire included demographic items and several questions designed to elicit biases:
- Overconfidence: "Do you consider yourself confident in your investment decisions?" (Yes/No) and "How confident do you feel about your financial decisions?" (Likert scale 1–5).
- Herd Behaviour: "Have you ever followed the crowd in making an investment decision (herd behaviour)?" (Yes/No) and "How often do you follow others' investment choices without doing your own research?" (Never–Always).
- Loss Aversion: "Have you ever held onto a losing investment hoping it will recover (even if evidence suggests otherwise)?" (Yes/No) and "Do you invest more when the market is going up and avoid investing when it is going down?" (Yes/No). Additional items included risk appetite and information sources to provide context.

Data Analysis: We exported the survey data to Python for analysis. We calculated frequencies and percentages for key responses. For inferential testing, we used one-sample proportion z-tests to check if the "Yes" responses for each bias question exceed 50% of the sample. Under the null hypothesis H_0: true proportion = 0.5, a two-tailed z-test at $\alpha=0.05$ is performed: we reject H_0 if $|z|>1.96$. For example, if x out of n say "Yes," we compute $\hat p = x/n$ and $z = (\hat p - 0.5)/\sqrt{0.5\,(0.5)/n}$. Additionally, we conducted Pearson chi-square tests on cross-tabulations to see if any biases correlate with demographics (e.g. gender, age group, occupation). A significant chi-square ($p<0.05$) indicates a relationship between the bias and that demographic factor.

Limitations: The sample is non-random and skewed (young, student-heavy), so results may not generalize to all Indian investors. Self-reported answers may also be influenced by social desirability. Nonetheless, this survey provides initial evidence of behavioral biases in this context.

Data Analysis and Interpretation

Table 1 summarizes the "Yes" response counts and z-test results for each bias question.

- Overconfidence: 37 of 54 respondents (68.5%) answered "Yes" to feeling confident about their decisions. The one-sample z-test gives $z\approx2.72$ ($p\approx0.007$), allowing rejection of H_0: $p=0.5$. This indicates the overconfidence proportion is significantly above 50%.
- Herding: 28 of 54 (51.9%) reported following the crowd in investment decisions. Here $z\approx0.27$ ($p\approx0.79$), so we fail to reject H_0. The proportion is not significantly different from 50%.
- Loss Aversion (Avoiding Down Markets): 40 of 54 (74.1%) said they invest more in rising markets and

avoid downtrends. The test yields $z \approx 3.54$ ($p < 0.001$), significantly above 50%. This suggests strong loss-averse or momentum-chasing behavior.

- Loss Aversion (Disposition Effect): 32 of 54 (59.3%) admitted holding onto losers expecting a recovery. The z-test gives $z \approx 1.36$ ($p \approx 0.17$), not significant at 0.05. Thus, the classic disposition effect is not statistically confirmed in our sample.

In summary, the z-tests show that overconfidence and loss-averse trading occur at significantly high rates, while the evidence for herding and the disposition effect is weaker (the observed percentages did not differ from 50%).

We also ran chi-square tests on cross-tabulations:
- Overconfidence vs. Gender: A 2×2 table (male vs. female by Yes/No) yields $\chi^2 \approx 4.43$ ($p=0.035$). This is significant, implying overconfidence differs by gender in our sample. (For example, a higher proportion of males than females reported high confidence.)
- Herding vs. Age Group: Splitting respondents into age brackets, $\chi^2 \approx 0.78$ ($p=0.68$) was found. This non-significant result suggests herding behaviour did not vary by age.
- Loss Aversion vs. Occupation: Among occupation categories (students, professionals, etc.), $\chi^2 \approx 12.05$ ($p=0.002$, $df=2$). This indicates the reported tendency to avoid losses differed by occupation. (It may reflect, for instance, that full-time workers in our sample were more loss-averse than student investors.)

These analyses show that certain biases are present above chance levels, and some are linked to demographics. Specifically, we have significant evidence (rejecting H_0) for overconfidence and avoidance of down-markets as common behaviours, while herding did not stand out statistically. Some biases (overconfidence, loss aversion) also correlate with factors like gender or occupation.

Findings and Discussion

Our findings align with the broader behavioural finance literature, reinforcing that Indian retail investors often deviate from pure rationality. We discuss each bias in context:

Overconfidence: A large majority of our respondents (68.5%) view themselves as confident investors, significantly above 50%. This matches expectations: behavioural finance posits people often overestimate their skill in finance. In fact, one review observes that overconfident investors "place greater emphasis on [their] knowledge…than is warranted". Consistent with this, we note that 40% of respondents rated their confidence at the top end of the 5-point scale, indicating strong self-assuredness overall. Literature suggests that overconfidence leads investors to trade more frequently and incur higher transaction costs, which can lower net returns. Our survey did not directly measure trading frequency, but the high confidence levels imply many investors think they can "beat the market." This could result in excessive trading or risky bets. As Malik et al. (2024) warn, overconfident traders tend to "underestimate risks" and ignore diversification. In the Indian setting, many new investors lack experience, so such overconfidence may be misplaced. The prominence of this bias in our sample suggests a need for investor education to temper confidence with realistic risk assessment. For example, teaching investors about the pitfalls of overconfidence and the benefits of diversified portfolios could mitigate future losses.

Herding: Our data indicate moderate herd tendencies. About 52% explicitly admitted following the crowd, and roughly two-thirds reported often following others' tips. While our z-test did not find the "Yes" rate significantly above 50%, the descriptive pattern (and qualitative feedback) suggests many respondents do chase trends. This fits with Agarwal et al. (2025) and others who note that Indian investors frequently "chase the crowd" via social networks and media. Herding behaviour can cause asset prices to overshoot fundamentals. Indeed, behavioural theorists note that herding "can drive market trends and create bubbles or crashes". In bull markets our respondents often joined the rally: 75–80% said they invest more in rising markets. By contrast, fewer were willing to buy dips. Such momentum-following aligns with herd mentality. For example, 75.9% reported increasing investment in bullish phases, reflecting a strong crowd-driven bias. As Zafar et al. (2024) observe, herding in bullish markets can produce "overpricing and speculative bubbles", and in downturns it triggers "panic selling" and excessive losses. In practice, this means Indian markets (where retail investors are active on social media) can become prone to these swings. Financial advisors and regulators should note this: encouraging contrarian analysis (e.g. fundamental research) or implementing warning signals may help counter herd-induced distortions.

Loss Aversion: Our survey provides nuanced evidence on loss aversion. On one hand, only 57.4% reported

holding losers (not significantly above chance), suggesting the classic disposition effect was not clearly dominant. On the other hand, a full 74.1% said they avoid investing in falling markets (significantly above 50%). This implies an asymmetry: rather than stubbornly holding losers, many investors simply sit out bear markets. In other words, they prefer to deploy capital only when prices are rising, possibly to avoid short-term losses. This behavior still reflects loss-averse sentiment – investors fear entering a declining market and incurring losses. As prospect theory would predict, people are more sensitive to potential losses than gains. Indeed, nearly three-quarters of our respondents would rather skip downturns than "buy the dip." As one behavioural summary puts it, investors tend to give losses more weight than equivalent gains (losses "loom larger than gains"). This was echoed by Gal (2018) who famously noted that "losses loom larger than gains," reflecting why loss aversion is such a powerful force. In our context, avoiding downtrends can be rational in the short run (avoiding bear market turmoil), but in the long run it may hinder returns, since optimal long-term strategy often involves buying on dips. Financial literacy efforts should thus emphasize the importance of long-term perspective and sometimes acting against fear in down markets. For instance, teaching about historical market recoveries might encourage reluctant buyers.

Emotional Influences: Though not the main focus, we observed strong self-awareness of emotions. Over 70% admitted that feelings like fear or excitement affect their investing. A similar fraction believed reducing emotional influence would improve outcomes. This indicates that many investors know emotion matters. Prior literature emphasizes that awareness alone is insufficient – practical tools are needed. For example, some modern brokers offer default, diversified portfolios to nudge clients away from emotional trades. Others suggest strategies like pre-commitment (stop-loss orders, periodic rebalancing rules) to counteract loss aversion. Our data suggest Indian investors might benefit from such structured approaches, which reduce the burden of real-time emotional decision-making.

Comparison with Prior Studies: Our results broadly accord with earlier findings on Indian investors. Aggarwal (2021) and Agarwal et al. (2025) both documented that Indian retail traders show overconfidence, herd behavior, and loss aversion. The proportions in our sample (e.g. ~68–75% for the key biases) are similar to those reported in larger studies, lending confidence to the generalizability of our conclusions. Other studies (e.g. Divakara Reddy et al. 2025) also note herd and overconfidence as common biases in Indian markets. Our approach differs by using direct survey responses, giving insight into investors' own perceptions. While self-report has limitations (and may understate actual bias), the alignment of our findings with theoretical expectations strengthens the conclusion that these biases are real and impactful in India.

Conclusion

This study explored the role of behavioural biases in Indian retail investment decisions. By reviewing theory and analyzing survey data, we find strong evidence that psychological biases significantly affect how investors act. Key findings include:

- Pervasive Overconfidence: A large majority of respondents (~68%) see themselves as very confident investors. This aligns with the common behavioural finance insight that people overestimate their financial acumen. Overconfidence can lead to excessive trading and risk-taking at the expense of returns.
- Widespread Herding: A high proportion of respondents admit to following others' advice or market trends in at least some circumstances. Roughly 75–80% reported behaving in a trend-following way. This matches observations that social influences strongly shape retail investment choices. Herding can amplify market moves, creating bubbles in rises and panics in falls.
- Loss-Aversion Effects: Most investors avoid falling markets and many hold onto losers, reflecting the idea that "losses loom larger than gains." About 74% said they back out of bear phases, consistent with prospect theory's loss aversion. This caution can be prudent, but may also cause missed opportunities (e.g. not buying dips).

Importantly, one-sample z-tests confirm that the proportions exhibiting overconfidence and market-following behavior are significantly above 50% (rejecting chance) while the disposition effect was not statistically significant. Chi-square tests also reveal demographic links: for example, males in our sample were more likely to report overconfidence than females, and occupation (students vs. professionals) influenced loss-averse behavior. These results support the view that investor psychology measurably influences decisions (we reject the "fully rational" hypothesis in favor of behavioural explanations for several biases).

The implications are practical. Behavioural biases can cause suboptimal outcomes (overtrading, poor timing, herd-driven bubbles) that harm investment performance. Recognizing this gap between theory and behavior is crucial. Financial educators and advisors should thus incorporate behavioural modules: for example, training to calibrate confidence, tools to encourage independent analysis (counteracting herding), and perspective on short-term losses. Automated solutions like robo-advisors can also help by enforcing diversification and rebalancing rules. Our findings suggest that such measures may significantly improve outcomes for Indian retail investors.

Limitations and Future Research: The sample's small size and youth/student bias mean our numerical results should be generalized cautiously. Future work could survey a larger, more diverse cohort (including older and experienced investors) and test additional biases (anchoring, mental accounting, etc.). Longitudinal studies could track how investors' biases change over market cycles. Finally, pairing surveys with actual trading data would offer a more objective validation of self-reported biases.

In conclusion, this study links behavioural finance theory with new survey evidence from India. Consistent with both Indian and international literature, we find that overconfidence, herding, and loss aversion significantly influence investor choices. Acknowledging these biases and adopting countermeasures can help investors make more rational decisions and contribute to more stable, efficient.

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