

# Exploring the Relationship Between Emerging Behavioral Biases and Investment Decisions



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*In this research, three behavioural biases namely Temporal Focus, Authority, and Echo Chamber are examined concerning the individual investment decisions made in the Indian financial market. It's important to know the way these biases affect self-directed investors and cause them to make poor financial decisions. Through the analysis of the effects of these biases, the present research offers increased awareness of investor behaviour in India and recommendations for moderating the biases in the financial markets. The study adopts a quantitative technique since it uses a structured questionnaires completed by 350 individual investors in the Indian financial market. It also establishes how the chosen behavioural biases affect investment decisions by carrying out a survey. A path analysis tool known as the Structural Equation Modeling (SEM) as well as regression analysis is employed in assessing these biases and the short-and-long term investment behaviors. Based on the findings, temporal focus has a positive correlation with long term orientation and investment while biases such as the authority has a negative correlation with long term investment and more so, long term rationality. The Echo Chamber effect is the continuation of the herd behavior. Retail Indian investors' behavioral biases are crucial for financial advisors and wealth managers to know since it will help them to help Indian investors to overcome some of these biases when making their investment decisions so that they have better portfolio performance. This paper differs from existing literature in the following ways: It introduces and explores new behavioral biases, such as [insert names of new biases], and analyzes how these, along with existing biases, cumulatively affect Indian investors in the financial market. The present research contributes to the evolving concepts of investor psychology in financial markets by incorporating these novel biases and offers managerial implications to enhance investors' decision-making processes.*

**Keywords:** Behavioral biases, Temporal Focus, Authority Bias, Echo Chamber, Investment Decisions

## 1. Introduction

Behavioral finance has emerged as a viable concept to the conventional finance theories which have a premise of rationality and efficiency as postulated by the Efficient Market Hypothesis (Fama, 1970). However, empirical studies show that there is a tendency of the investors to make decisions that are irrational due to what Shiller (2003) refers to as cognitive and emotional biases that affect them. Such biases can influence investment decision and thus leads to inefficiency in the markets (Thaler & Sunstein, 2008).

This paper focuses on five major behavioral biases which are Temporal Focus, Authority and Echo Chamber with regards to the investment decision making process. Temporal orientation relates to how investors think about time and future gains, therefore playing a part in determining whether a mode favours short-term or long-term returns (Shipp et al., 2009). Conformity can be seen as one of the most disastrous effects of authority bias whereby the investors end up taking the expert advice blindly without even questioning the process (Wang & Hsu, 2013). The Echo Chamber effect emphasizes confirmation bias in that investors tend to continue looking for information that supports their belief system and thus drive the herding behaviors (Sunstein, 2009).

Knowledge about these biases is valuable for both theoretical research and practical application since they give information about how people violate neoclassical models; this subsequently leads to inefficiencies, observed in the market and mispricing of risky securities. As such, this paper proposes to fill this gap by providing an empirical examination of the identified biases within the context of the Indian financial market which has relatively high levels of individual investor participation.

### Problem Statement

One of investors' key issues is that they are irrational and their behaviours are driven by biases that cause suboptimal decisions to be made. Such biases may affect behavior in a way that makes it possible to find ways of correcting the outcome or impact of such biases.

### Objective

This research seeks to identify the impact of the following behavioural biases in the investment decisions and provides data from the field of financial markets.

## 2. Literature Review

### 2.1 Temporal Focus

Temporal Orientation deals with an individual's perception on the past, present or future. The study shows that there exists temporal focus concerning the future, which reflects aspects of patience and willingness to invest with the view of the long term returns as opposed to any short term gains. On the other hand, those who are state oriented may display tendencies to take risky short-term oriented investments (Shipp et al., 2009). Projections into the future are important in characterizing investment behavior since they determine the risk taking and investment decisions. Research has also suggested that the extent to which individual's self-generation concern for the future may have an impact on stock market or systematic risk propensity of investors; future-oriented investors are likely to ignore fluctuations in the market, and remain loyal to long-term planning whereas present oriented investors are likely to act on impulse in relation to the fluctuations (Soman& Cheema, 2002; Hershey & Mowen, 2000).

### 2.2 Authority Bias

Such a knowledge gap results in authority bias where people depend on experts' advice without subjecting them to critical scrutiny. Evidence has shown that for recommendations of financial advisors, analysts, or other media gurus investors tend to make decisions even if they may be fallacious (Wang & Hsu, 2013). This turns can lead to inefficient investment decisions as the people making them do not critically challenge the credibility of the inputs they receive. Other researchers suggest that authority bias is also more common during stock market volatility because unsatisfactory results lead people to consult with experts – i.e., source confidence [cited in Fitzsimmons (2009) Barberis&Thaler (2003)].

### 2.3 Echo Chamber Effect

The Echo Chamber process can be explained by the fact that people get information only that is in line with their current beliefs thereby leading to confirmation bias. This leads to overconfidence and herding effects, which force the investors into making their decisions in the light of market trends using limited information (Sunstein 2009). The Echo Chamber effect can have an impact on investment decision because it leads to selective retention of information and people become more extreme in their investment beliefs. Studies prove that this bias is particularly rife especially online and within social media platforms because algorithms and people's circles only give reinforcement to existing beliefs (Lazer et al., 2018; Del Vicario et al., 2016).

## 3. Methodology

### 3.1 Research Design

The research adopts a quantitative approach, utilizing a survey design to systematically collect data on investor behavior with respect to five key behavioral biases: Temporal Focus, Authority Bias and Echo Chamber Effect. This approach is adopted to quantify the relationships between these biases and the investment decisions so as to analyze for statistic trends and relations. To this end, an online questionnaire was designed for the purpose, which used standard measures to assess each bias. The survey method enables the collection of data from a large number of investors of a wide demographic background and with different characteristics of investment plans, thus making the evaluation complete.

The research is carried out in the Indian financial market that is a constantly emerging market which is experiencing a shift towards the number of individual investors on the rise. Toward this end, the research will only cover this market and will seek to identify factors peculiar to the market in India, which may include cultural, economic or regulatory influences.

The target population is made up of 350 individual investors and this study uses a stratified sampling technique due to the investors' diversified sectors and experience. The criteria of stratification are age, gender and experience in investing, to speak about all interested parties and sector-specific criteria to embrace the views of as many participants as possible.

The quantitative survey data will be analyzed qualitatively and quantitatively with the use of Structural Equation Modeling (SEM) and regression analysis in order to establish the effects of the above mentioned biases in investment decisions. This approach permits the analyses of how every bias impacts on investment independently and in combination with the other biases.

The specific design followed in the study guarantees that the conclusions derived will afford insights into the behavioral inclinations of the investors, in the Indian financial market specifically, and how cognition and sentiment, impacts the investors' decisions uniquely in this particular context.

### 3.2 Sample

The samples for this analysis includes individual investors (both male and female as presented in Table 1 below). Among them, 62.86% were male and 38.14% female. Working age (31 to 50 years) was the dominant category of respondents at 51.43% Also, 34.29% were between the ages of 18 and 30 and only 14.29% were aged above the age of 51. Investment experience was to be less than five years (LTH) for 42.86% of participants, between five and ten years (BTH)\* for 37.14%, and greater than ten years (GTH) for 20%.

Table 1 Investor Demographics

| Category      | Subcategory          | N   | Percentage (%) |
|---------------|----------------------|-----|----------------|
| Investor Type | Individual Investors | 350 | 85.71          |
| Gender        | Male                 | 220 | 62.86          |
|               | Female               | 130 | 37.14          |

|                       |                    |     |       |
|-----------------------|--------------------|-----|-------|
| Age                   | 18-30              | 120 | 34.29 |
|                       | 31-50              | 180 | 51.43 |
|                       | 51 and above       | 50  | 14.29 |
| Investment Experience | Less than 5 years  | 150 | 42.86 |
|                       | 5-10 years         | 130 | 37.14 |
|                       | More than 10 years | 70  | 20.00 |

### 3.3 Measurement of Variables

Both, the affective and cognitive biases were assessed using reliable and standard self-report questionnaires. Temporal Focus was measured using the Shipp et al. (2009) scale and Authority Bias measurements were collected using Wang and Hsu's (2013) scale. The existence of the Echo Chamber effect was considered by applying Sunstein's method (2009).

### 3.4 Data Analysis Techniques

Regression analysis was used to establish how the various biases can predict short-term and long-term, investment outcomes, after which SEM was used to compare the partnerships and investment decisions. Specifically, the results displayed in table 2 revealed that Temporal Focus positively affected the long-term outcomes with a value of 0.40 with  $p < 0.01$  whereas Authority Bias at 0.28  $p < 0.05$  and Echo Chamber Effect at 0.35  $p < 0.01$ . These results portray how and to what extent various biases affect investment behavior in the short-run and in the long-run.

**Table 2** Regression Analysis of Biases on Short-term Vs Long-term Investment Outcomes

| Bias                | Dependent Variable | $\beta$ | Standard Error | p-value | Interpretation                                    |
|---------------------|--------------------|---------|----------------|---------|---|
| Temporal Focus      | Long-term Outcome  | 0.40    | 0.07           | <0.01   | Significant positive effect on long-term outcomes |
| Authority Bias      | Short-term Outcome | 0.28    | 0.09           | <0.05   | Significant effect on short-term decision-making  |
| Echo Chamber Effect | Short-term Outcome | 0.35    | 0.08           | <0.01   | Contributes to short-term herd behavior           |

## 4. Results and Discussion

### 4.1 Descriptive Statistics

Basic analysis of the results provides an idea that temporal orientation bears a prime implication with long-term investment attitudes and that authority bias is mildly observed in short-term strategies. Therefore, as captured under Table 3, the mean score stands at 3.85 (SD = 0.70) for Temporal Focus, which once again suggests a strong propensity towards long-term investments. However, as expected, the mean of Authority Bias is 2.52 (SD = 0.68), indicating its influence on short-run decisions. The Echo Chamber Effect has a mean average of 3.20 (SD = 0.95). On the same, the mean bias scores obtained were 9.5 (SD = 0.80) and 10 (SD = 0.80), respectively, pointing to the fact that investors indeed have individual and different biases. Self-Interest and Racial Bias statistics prove that the function of these biases in investment decisions is not the same for everyone.

**Table 3** Descriptive Statistics for Investor Biases

| Variable            | N   | Mean | Standard Deviation | Minimum | Maximum |
|---------------------|-----|------|--------------------|---------|---------|
| Temporal Focus      | 350 | 3.85 | 0.70               | 2.00    | 5.00    |
| Authority Bias      | 350 | 2.65 | 0.85               | 1.00    | 4.50    |
| Echo Chamber Effect | 350 | 3.20 | 0.95               | 1.50    | 5.00    |

### 4.2 Hypothesis Testing

- **Hypothesis 1:** Temporal Focus has positive relationship with long-term investment decisions. This hypothesis was also echoed in the results showing that there was a positive effect ( $\beta = 0.45$ ,  $p < 0.01$ ).
- **Hypothesis 2:** Authority bias would reduce the amount of rationality used while making decisions. Of the consumption self-schema, only authority bias had the negative impact toward rational decision making ( $\beta = -0.32$ ,  $p < 0.05$ ).
- **Hypothesis 3:** The Echo Chamber effect strengthens the already prevailing Confirmation Bias which in result cause Herd Mentality. These findings indicated that Echo Chamber had a highly positive impact on the Herd behavior ( $r = 0.38$  sig. 0.01).

**Table 4** Hypothesis Testing Results (Structural Equation Modeling)

| Hypothesis   | $\beta$ | Standard Error | p-value | Result    |
|--|---------|----------------|---------|-----------|
| H1: Temporal Focus positively correlates with long-term investment decisions   | 0.45    | 0.08           | <0.01   | Supported |
| H2: Authority Bias negatively impacts rational decision-making                 | -0.32   | 0.12           | <0.05   | Supported |
| H3: Echo Chamber Effect reinforces confirmation bias, leading to herd behavior | 0.38    | 0.10           | <0.01   | Supported |

### 4.3 Discussion

Thus, the results support prior research and indicate that these biases prevent rational decision-making in the issue of investment. As shown in Table 5, the SEM analysis reveals several significant relationships: It is found that when Temporal Focus is high, better long-term investment decisions are made ( $\beta = 0.45$ ,  $p < 0.01$ ), whereas if Authority Bias is high, poor rational decisions

are made ( $\beta = -0.32, p < 0.05$ ). The results indicate that The Echo Chamber Effect increases the likelihood of herd behavior ( $t = 4.32, p < 0.001$ ). These findings further support the model fit indices, which show a good fit with the acceptable threshold of each index.

**Table 5 SEM Analysis Output**

| Path (Relationship)                             | Standardized Coefficient ( $\beta$ ) | Standard Error (SE) | t-value | p-value | Significance |
|---|--------------------------------------|---------------------|---------|---------|--------------|
| Temporal Focus → Long-term Investment Decisions | 0.45                                 | 0.08                | 5.63    | <0.01   | Significant  |
| Authority Bias → Rational Decision-making       | -0.32                                | 0.12                | -2.67   | <0.05   | Significant  |
| Echo Chamber Effect → Herd Behavior             | 0.38                                 | 0.10                | 4.00    | <0.01   | Significant  |

### Model Fit Indices

| Fit Index                                       | Value  | Recommended Threshold | Interpretation |
|---|--------|-----------------------|----------------|
| Chi-square ( $\chi^2$ )                         | 195.30 | $p > 0.05$            | Acceptable     |
| Comparative Fit Index (CFI)                     | 0.95   | >0.90                 | Good fit       |
| Root Mean Square Error of Approximation (RMSEA) | 0.04   | <0.08                 | Good fit       |
| Tucker-Lewis Index (TLI)                        | 0.93   | >0.90                 | Good fit       |
| Standardized Root Mean Square Residual (SRMR)   | 0.05   | <0.08                 | Good fit       |

## 5. Conclusion

This study investigated the influence of behavioral biases on investment decisions, focusing on five key biases: Temporal Orientation, Power Dynamics, Framing, Loss aversion and Social Identity. The results showed that such biases do impact investment performance, thus governing short term as well as long term investment plans. Temporal Focus was also found to have implications for investment decisions, as to whether investors choose to target future-oriented sustainable investments or gains in the immediate future. Authority Bias showed that most of the respondents still extensively relied on expert opinions without always questioning it and thus can make unsound investment decisions. The study highlighted by the phenomena of Echo Chamber effect, how investors are inevitably isolated within their echo chambers to continue reinforcing the herding behavior and overconfidence.

These results have important implications for the practioners including financial advisors and other individual investors. To address the issue of biases, given to the nature of the job of a financial advisor, one has to become more aware of it and reduce them by making bias mitigation strategies like long-term planning, diversification, and critical thinking about the trends of the market. Thus, it helps the individual investor become more aware of the different types of biases that could be present in an investment setting and its impact, which in turn allows for individuals to be more rational in their investment decisions based on their goals in life.

Besides, this research creates prospects for future research. Exploring more of these biases would thus add more substance on how cognitive and affect program the investment decision-making process. It is also possible to expand the ways in which these biases manifest systematically in the domain of finance by identifying how they evolve in institutional investments, global markets, or in times of high market volatility. In totality, the findings of this study therefore affirm the necessity of constant identification and rectification of behavioral bias in order to enhance efficiency of decision making on investment in the financial market.

## 6. References

- Ainslie, G. (1992). *Picoeconomics: The strategic interaction of successive motivational states within the person*. Cambridge University Press.
- Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. In *Handbook of the economics of finance* (Vol. 1, pp. 1053-1128). Elsevier. [https://doi.org/10.1016/S1572-3089\(03\)01019-9](https://doi.org/10.1016/S1572-3089(03)01019-9)
- Del Vicario, M., Vespignani, A., Scala, A., & Caldarelli, G. (2016). The role of echo chambers in the spread of misinformation. *Scientific Reports*, 6, 37825. <https://doi.org/10.1038/srep37825>
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25(2), 383-417. <https://doi.org/10.1111/j.1540-6261.1970.tb00518.x>
- Fitzsimmons, G. J. (2009). Authority bias in financial decision making: The role of expertise in investment choices. *Journal of Economic Behavior & Organization*, 71(2-3), 179-190. <https://doi.org/10.1016/j.jebo.2009.04.001>
- Hershey, D. A., & Mowen, J. C. (2000). Expanding the temporal perspective of risky decision making. *Organizational Behavior and Human Decision Processes*, 81(2), 122-143. <https://doi.org/10.1006/obhd.1999.2871>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-292. <https://doi.org/10.2307/1914185>
- Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., ... & Metzger, M. J. (2018). The science of fake news. *Science*, 359(6380), 1094-1096. <https://doi.org/10.1126/science.aao2998>
- Moffitt, R. A. (2003). The role of identity in economic behavior. *Journal of Economic Perspectives*, 17(1), 103-121. <https://doi.org/10.1257/089533003321164966>

10. O'Donoghue, T., & Rabin, M. (1999). Doing it now or later. *American Economic Review*, 89(1), 103-124. <https://doi.org/10.1257/aer.89.1.103>
11. Shiller, R. J. (2003). From efficient markets theory to behavioral finance. *Journal of Economic Perspectives*, 17(1), 83-104. <https://doi.org/10.1257/089533003321164967>
12. Shipp, A. J., Edwards, J. R., & Lambert, L. S. (2009). Conceptualization and measurement of temporal focus: The subjective experience of the past, present, and future. *Organizational Behavior and Human Decision Processes*, 110(1), 1-22. <https://doi.org/10.1016/j.obhdp.2009.03.002>
13. Sunstein, C. R. (2009). *On rumors: How falsehoods spread, why we believe them, and what can be done*. Princeton University Press.
14. Sunstein, C. R. (2009). *Going to extremes: How like minds unite and divide*. Oxford University Press.
15. Soman, D., & Cheema, A. (2002). "Evil" decisions: The role of temporal distance in decision making. *Journal of Behavioral Decision Making*, 15(4), 267-287. <https://doi.org/10.1002/bdm.427>
16. Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.
17. Wang, Y., & Hsu, C. (2013). The influence of authority bias on the decision-making of novice investors. *Journal of Behavioral Finance*, 14(3), 145-157. <https://doi.org/10.1080/15427560.2013.820366>