



A Study on Behavioural Biases in Investment Decisions

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ABSTRACT

This study investigates the impact of cognitive and emotional biases on investment decisions among individual investors in India. Through a comprehensive survey questionnaire, data were collected from 100 respondents, focusing on cognitive biases such as overconfidence, anchoring bias, confirmation bias, availability bias, and loss aversion, as well as emotional biases including fear of missing out, herding behaviour, regret aversion, and overoptimism. Descriptive statistics revealed varying levels of agreement with these biases among participants, indicating prevalent behavioural tendencies in investment decision-making. Correlation analysis further explored the relationships between cognitive and emotional biases and investment decisions, revealing moderate positive correlations between biases and investment choices. An analysis of variance (ANOVA) identified significant differences in investment decisions across different levels of cognitive and emotional biases, providing empirical support for the influence of biases on investment behaviour. Regression analysis elucidated the predictive power of cognitive and emotional biases on investment decisions, highlighting their role in explaining variability in investment outcomes. The findings suggest that investors' cognitive and emotional biases play a significant role in shaping their investment decisions, influencing their risk perceptions, portfolio choices, and overall investment performance. Theoretical implications underscore the relevance of behavioural finance theories in understanding investor behaviour, while managerial implications emphasize the importance of investor education and behavioural interventions in mitigating biases and enhancing investment decision-making. Despite the study's contributions, limitations such as sample size and generalizability warrant further research. Future studies could explore the cultural, technological, and interdisciplinary dimensions of behavioural finance, providing deeper insights into investor behaviour and decision-making processes. Overall, this study contributes to the growing body of literature on behavioural finance, highlighting the complexities of human decision-making in financial markets.

Keywords: Behavioural finance, Cognitive biases, Emotional biases, Investment decisions

INTRODUCTION

In the dynamic landscape of financial markets, individual investors are constantly confronted with a myriad of investment opportunities, each presenting its own set of risks and rewards. Despite the availability of information and resources, human decision-making in the realm of investments often deviates from rationality due to the pervasive influence of cognitive and emotional biases. These biases, rooted in the inherent complexities of human psychology, have been extensively studied in the field of behavioural finance. The phenomenon of behavioural biases in investment decision-making has garnered significant attention from researchers, practitioners, and policymakers alike. However, the precise mechanisms through which these biases manifest and their impact on investment choices remain subjects of ongoing investigation. Recognizing the critical importance of understanding and mitigating these biases, particularly in the context of individual investors in India, this study seeks to delve deeper into the intricacies of behavioural biases and their implications for investment decisions.

The overarching objective of this research is to shed light on the effect of behavioural biases on investment decisions among individual investors in India. Through a systematic exploration of cognitive biases, such as overconfidence, anchoring bias, confirmation bias, availability bias, and loss aversion, alongside emotional biases including fear of missing out, herding behaviour, regret aversion, and overoptimism, this study aims to uncover the underlying drivers of investment behaviour in the Indian financial landscape. By employing a comprehensive survey questionnaire and utilizing both quantitative and qualitative data collection methods, this study endeavours to provide empirical insights into the prevalence and impact of behavioural biases on investment decision-making. Statistical analysis techniques, including correlation analysis, analysis of variance (ANOVA), and regression analysis, will be employed to elucidate the relationships between cognitive and emotional biases and investment decisions.

The findings of this research are expected to contribute to the existing body of literature on behavioural finance, offering valuable insights into the complexities of human decision-making in financial markets. Furthermore, the practical implications of this study hold significant relevance for investors, financial advisors, and policymakers, highlighting the importance of investor education and behavioural interventions in fostering more informed and prudent investment decisions.

LITERATURE REVIEW

The field of behavioural finance offers valuable insights into the complex interplay of psychological factors and investment decision-making processes. Numerous studies have examined the impact of cognitive and emotional biases on investor behaviour, shedding light on the challenges inherent in achieving rational decision-making in financial markets. Jhandir (2014) and Pinglu (2021) both emphasize the significance of understanding behavioural biases in investment decision-making, particularly in emerging markets like Pakistan. Through survey-based approaches, these studies identify biases such as overconfidence, herding, and disposition effect, highlighting their substantial influence on investment decisions among different types of investors. These findings underscore the importance of investor education and training in mitigating biases and enhancing decision-making quality, aligning with the broader objective of improving market efficiency and investor welfare. Similarly, studies by Upadhyay and Shah (2019), Shukla (2020), and Gupta (2021) delve into the realm of behavioural finance, examining various cognitive and emotional biases that affect investment decisions. Through structured questionnaire-based research, these studies explore biases such as overconfidence, anchoring, regret aversion, and herding behaviour, aiming to elucidate their impact on investor behaviour and decision-making processes. By identifying the key drivers of investment decisions and evaluating the significance of behavioural finance concepts, these studies contribute to a deeper understanding of investor behaviour and the application of behavioural finance theories in real-world investment scenarios.

The research conducted by Seth and Kumar (2020), Seth and Kumar (2020), and Madaan and Singh (2019) further enrich our understanding of investor behaviour by examining the relationship between behavioural biases and investment decisions in specific contexts, such as sector-wise investments and regional variations. Through empirical investigations and statistical analyses, these studies reveal the nuanced effects of biases on investment choices and highlight the importance of sector-specific interventions and regulatory measures in promoting informed decision-making and market efficiency. Additionally, studies by Dungarwal (2022), Sharma (2019), and Toma (2015) underscore the pervasive influence of behavioural biases on investment decisions, emphasizing the need for greater awareness and understanding of these biases among investors and financial intermediaries. By identifying common errors and offering corrective actions, these studies provide practical insights for improving decision-making processes and enhancing investor outcomes. Furthermore, Lin's (2021) study in Taiwan's financial market and Mandal and Riyat's (2021) examination of individual investor behaviour in complex financial environments offer valuable insights into the relationship between behavioural biases and rational decision-making. Through structural equation modelling and route analysis, these studies uncover the intricate dynamics of behavioural biases and their impact on investment decisions across different demographic factors. By highlighting the role of rational decision-making alongside behavioural biases, these studies contribute to a more nuanced understanding of investor behaviour and decision-making processes in diverse financial contexts. The literature reviewed underscores the multifaceted nature of behavioural biases and their significant influence on investment decisions. From identifying common biases to exploring their implications in various market settings, these studies collectively contribute to the growing body of knowledge in behavioural finance. By recognizing the importance of addressing behavioural biases and promoting informed decision-making, policymakers, financial analysts, and investors can work towards improving market efficiency and enhancing investor welfare in the ever-evolving landscape of financial markets.

RESEARCH OBJECTIVE

The overall objective of the study is to determine the effect of behavioural biases on investment decisions of individual investors in India. It specifically aims at:

1. To determine the cognitive biases that affect investor decisions
2. To determine the emotional biases that affect investor decisions
3. Explore correlations between behavioural biases and investment decisions

RESEARCH HYOTHESIS

1. Cognitive Biases and Investment Decisions:

Null Hypothesis (H₀): There is no significant relationship between cognitive biases and investment decisions among individual investors in India.

Alternative Hypothesis (H₁): Cognitive biases significantly influence investor decisions, impacting the rationality of investment choices.

2. Emotional Biases and Investment Decisions:

Null Hypothesis (H₀): Emotional biases do not have a substantial impact on investment decisions made by individual investors in India.

Alternative Hypothesis (H₁): Emotional biases play a significant role in shaping investor decisions, affecting the emotional aspects of investment choices.

3. Correlations between Behavioural Biases and Investment Decisions:

Null Hypothesis (H₀): There are no statistically significant correlations between behavioural biases and investment decisions among individual investors in India.

Alternative Hypothesis (H₁): There exist significant correlations between various behavioural biases and investment decisions, indicating a relationship between cognitive and emotional factors and investment choices.

RESEARCH METHODOLOGY

The research methodology employed in this study aims to comprehensively investigate the impact of behavioural biases on investment decisions among individual investors in India. Through a quantitative research approach, numerical data will be systematically collected and analyzed to test hypotheses and identify trends or correlations between variables related to cognitive and emotional biases and investment decisions.

Research Approach: The study adopts a quantitative research methodology, focusing on the methodical gathering and analysis of numerical data to evaluate and quantify cognitive and emotional biases and their influence on investment decisions. This approach allows for precise assessment and measurement of behavioural biases among individual investors in the Indian financial market.

Data Collection Method: Data will be collected through the distribution of the structured questionnaire, which can be completed either in-person or electronically. This mixed-methods approach enables the collection of both qualitative insights and quantitative data, enhancing the richness and depth of the data collected. Participants will be provided with clear instructions on how to complete the questionnaire to ensure consistency and accuracy in responses.

Sampling Strategy: A random sampling approach will be utilized to select participants from the Indian individual investor community. Statistical techniques will be employed to calculate the appropriate sample size, ensuring that the results are representative of the target population. The inclusion criteria will encompass individuals actively involved in investment activities across various Indian financial markets.

Data Analysis Technique: Data analysis will be conducted using Excel serving as the primary tool for data management and preliminary analysis. Descriptive statistics, including measures of central tendency and dispersion, will be used to summarize the characteristics of the sample and variables. Inferential statistics, such as Anova testing and correlation analysis, will be employed to investigate the relationships between cognitive and emotional biases and investment decisions. Hypothesis testing will be conducted to ascertain the significance of these relationships and validate the study hypotheses.

RESULT AND DATA ANALYSIS

Gaining an understanding of the research participants' demographics is crucial to placing the results in perspective and providing insight into the investor community that is being studied. In the research paper "A Study on Behavioural Biases in Investment Decisions," demographic data offers significant background information on the makeup of the sample and facilitates the detection of any patterns or trends that might impact investing behaviour. The characteristics that make up the respondents' demographic profile include age, gender, educational background, income level, occupation, and experience with investments. Through the examination of these demographic aspects, scholars may ascertain how distinct groups of the investor community may manifest differing degrees of cognitive and emotional biases, therefore augmenting the comprehension of investor conduct inside the financial markets of India.

The study's respondent demographic profile offers important insights into the traits of the sample population. Participants in the research came from a wide range of age groups, genders, educational backgrounds, and yearly income ranges.

Gender		Education	
Male	65	High School	3
Female	35	Bachelor's Degree	33
Others	0	Master's Degree	61
Prefer Not to Say	0	Doctorate/Ph.D.	3
Age		Annual Income	
Under 25	55	Below 300000	33
25 to 35	32	300001 to 750000	27
36 to 45	6	750001 to 1000000	12
46 to 55	2	Above 1000000	28
56 and above	5		

Demographics of Respondent

The demographic profile of the respondents provides valuable insights into the characteristics of the sample population participating in the study. Gender distribution indicates a majority of male respondents, constituting 65% of the sample, while females make up 35%. This suggests a slight gender imbalance in the sample, with male participants being more represented. However, it's worth noting that the "Others" category, which likely includes non-binary or gender-nonconforming individuals, comprises 0% of the respondents, indicating a potential limitation in capturing diverse gender identities. In terms of education level, the majority of respondents hold a Bachelor's degree, accounting for 61% of the sample. This indicates a relatively high level of educational attainment among the participants, which could influence their investment knowledge and decision-making processes. Moreover, 33% of respondents have completed high school, while only 3% have attained a Doctorate/Ph.D., suggesting a diverse educational background within the sample.

Regarding age distribution, the data show a varied representation across different age groups. The majority of respondents fall under the "Under 25" category, constituting 55% of the sample. This indicates a significant proportion of younger individuals participating in the study, which could offer insights into the investment behaviour of this demographic. Additionally, there is a gradual decrease in the percentage of respondents as age increases, with fewer participants in the older age groups. Examining annual income, the data reveal a diverse range of income levels among the respondents. The largest proportion of respondents, comprising 33%, report an annual income below 300,000, followed closely by 28% earning above 1,000,000 annually. This suggests a wide income disparity within the sample, reflecting varying financial backgrounds and potentially different investment preferences and risk tolerances among participants.

Correlation Analysis Result

	<i>C1</i>	<i>C2</i>	<i>C3</i>	<i>C4</i>	<i>C5</i>	<i>E1</i>	<i>E2</i>	<i>E3</i>	<i>E4</i>	<i>P</i>
C1	1.000									
C2	0.403	1.000								
C3	0.334	0.259	1.000							
C4	0.295	0.361	0.566	1.000						
C5	0.301	0.239	0.519	0.605	1.000					
E1	0.220	0.224	0.511	0.669	0.583	1.000				
E2	0.358	0.311	0.515	0.547	0.596	0.620	1.000			
E3	0.308	0.437	0.478	0.604	0.564	0.611	0.640	1.000		
E4	0.192	0.240	0.555	0.665	0.628	0.658	0.622	0.602	1.000	
P	0.348	0.339	0.304	0.323	0.325	0.225	0.422	0.421	0.376	1.000

Cognitive Biases (C1-C5) and Investment Decisions (P):

The correlation coefficients between cognitive biases (C1 to C5) and the investment decision (P) show moderate positive correlations ranging from 0.295 to 0.403. These findings support the alternative hypothesis (H_1) by indicating that cognitive biases have a significant influence on investment decisions. Therefore, we reject the null hypothesis (H_0).

Emotional Biases (E1-E4) and Investment Decisions (P):

The correlation coefficients between emotional biases (E1 to E4) and the investment decision (P) vary, with some showing weak to moderate positive correlations ranging from 0.192 to 0.669. While these correlations suggest an association between some emotional biases and investment decisions, the strength of the relationships differs. Therefore, while there is evidence to partially support the alternative hypothesis (H_1), the mixed results suggest that emotional biases may not universally impact investment decisions to the same extent as cognitive biases.

The correlation coefficients between cognitive biases (C1 to C5) and emotional biases (E1 to E4) range from 0.192 to 0.669, indicating moderate positive correlations between certain pairs of biases. Additionally, the correlations between cognitive and emotional biases and the investment decision (P) also demonstrate moderate positive associations, ranging from 0.225 to 0.422. These results support the alternative hypothesis (H_1), suggesting that there are significant correlations between cognitive biases, emotional biases, and investment decisions among individual investors in India. The observed relationships between cognitive and emotional biases, as well as their correlations with investment decisions, indicate a complex interplay between cognitive and emotional factors influencing investment choices.

The correlation analysis provides evidence to reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1) for the third objective. It confirms the presence of significant correlations between cognitive and emotional biases, as well as their associations with investment decisions. These findings

emphasize the importance of considering both cognitive and emotional factors in understanding investor behaviour and decision-making processes comprehensively.

Anova: Single Factor						
SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
C1	100	369	3.69	0.983737		
C2	100	372	3.72	0.668283		
C3	100	351	3.51	0.939293		
C4	100	357	3.57	0.914242		
C5	100	341	3.41	1.01202		
P	100	657	6.57	3.055657		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	751.5683	5	150.3137	119.0881	3.78E-87	2.229193
Within Groups	749.75	594	1.262205			
Total	1501.318	599				

Anova Test Result for Cognitive Biases

The analysis of variance (ANOVA) conducted on the relationship between cognitive biases and investment decisions yields compelling evidence to support the hypothesis. The ANOVA results reveal a highly significant difference in investment decisions among various levels of cognitive biases (Overconfidence, Anchoring Bias, Confirmation Bias, Availability Bias, and Loss Aversion) at a statistically significant level ($p < 0.05$). This suggests that cognitive biases significantly influence investor decisions, impacting the rationality of investment choices. The p-value associated with the F-statistic is exceptionally small (3.77947E-87), indicating that the observed differences in investment decisions among different levels of cognitive biases are highly unlikely to have occurred by random chance alone. Consequently, we reject the null hypothesis, which posits no significant difference in investment decisions based on cognitive biases, and accept the alternative hypothesis, affirming the significant influence of cognitive biases on investment decisions among individual investors in India. This finding underscores the importance of understanding and addressing cognitive biases in investment decision-making processes to improve investment outcomes and mitigate potential risks associated with biased decision-making.

The p-value (P-value) associated with the F-statistic is extremely small (3.77947E-87), indicating strong evidence to reject the null hypothesis.

Therefore, we conclude that there is a significant difference in investment decisions among the different levels of cognitive biases (Overconfidence, Anchoring Bias, Confirmation Bias, Availability Bias, Loss Aversion).

Anova: Single Factor					
SUMMARY					
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>	
E1	100	349	3.49	0.959495	
E2	100	328	3.28	0.971313	
E3	100	338	3.38	0.904646	
E4	100	348	3.48	0.898586	
P	100	657	6.57	3.055657	
ANOVA					

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	803.02	4	200.755	147.838	4.41E-83	2.389948
Within Groups	672.18	495	1.357939			
Total	1475.2	499				

Anova Test Result for Emotional Biases

The ANOVA analysis conducted on the relationship between emotional biases and investment decisions yields significant insights into the influence of emotional factors on investment behaviour. The results demonstrate a clear and statistically significant difference in investment decisions across various levels of emotional biases, including Fear of Missing Out, Herding Behaviour, Regret Aversion, and Overoptimism. The calculated p-value associated with the F-statistic is exceptionally small (4.41313E-83), providing strong evidence to reject the null hypothesis and affirming the presence of meaningful variations in investment decisions attributed to emotional biases among individual investors in India. Consequently, we can confidently conclude that emotional biases play a substantial role in shaping investment decisions, underscoring the necessity of addressing and managing these biases to improve investment outcomes and promote more rational decision-making strategies. This finding underscores the importance of incorporating behavioural insights into investment practices and highlights the potential benefits of investor education and awareness programs aimed at mitigating the adverse effects of emotional biases on investment decisions. By recognizing and understanding the impact of emotional biases, investors can make more informed and objective investment choices, ultimately enhancing their financial well-being and portfolio performance.

The p-value (P-value) associated with the F-statistic is extremely small (4.41313E-83), indicating strong evidence to reject the null hypothesis. Therefore, we conclude that there is a significant difference in investment decisions among different levels of emotional biases (Fear of Missing Out, Herding Behaviour, Regret Aversion, and Overoptimism).

FINDINGS

The findings of the study reveal significant insights into the impact of cognitive and emotional biases on investment decisions among individual investors in India. Through the survey questionnaire, it became evident that investors exhibit various behavioral tendencies that influence their decision-making processes. Cognitive biases, such as overconfidence, anchoring bias, confirmation bias, availability bias, and loss aversion, were prevalent among respondents, indicating a propensity to rely on mental shortcuts and heuristic-driven decision-making. Similarly, emotional biases, including fear of missing out, herding behavior, regret aversion, and overoptimism, also played a significant role in shaping investor decisions, reflecting the influence of emotions on investment behaviour.

Correlation analysis unveiled moderate positive correlations between cognitive and emotional biases and investment decisions, highlighting the interplay between behavioral biases and investment choices. These findings underscore the importance of understanding investors' psychological tendencies in predicting their investment behaviour. Moreover, the analysis of variance (ANOVA) identified significant differences in investment decisions across different levels of cognitive and emotional biases, emphasizing the heterogeneous nature of investor decision-making. These results suggest that investors with varying levels of biases may exhibit different risk preferences and investment strategies, contributing to diverse investment outcomes.

The findings contribute to the growing body of literature on behavioural finance, shedding light on the complexities of investor behaviour in financial markets. By recognizing the influence of cognitive and emotional biases on investment decisions, practitioners and policymakers can develop tailored interventions and strategies to mitigate biases and improve investment decision-making processes.

CONCLUSION

This study offers valuable insights into the impact of cognitive and emotional biases on investment decisions among individual investors in India. Through a comprehensive analysis of survey data, it becomes evident that investors exhibit various behavioral tendencies that significantly influence their decision-making processes. Cognitive biases such as overconfidence, anchoring bias, confirmation bias, availability bias, and loss aversion, as well as emotional biases including fear of missing out, herding behavior, regret aversion, and overoptimism, play a significant role in shaping investor decisions.

The findings reveal moderate positive correlations between these biases and investment decisions, emphasizing the interplay between psychological tendencies and investment choices. Moreover, significant differences in investment decisions across different levels of biases highlight the heterogeneous nature of investor decision-making. These results underscore the importance of recognizing and understanding investors' behavioral biases in predicting their investment behaviour. From a theoretical perspective, this study contributes to the field of behavioral finance by providing empirical evidence of the prevalence and impact of cognitive and emotional biases on investment decisions. The findings have practical implications for investors, financial advisors, and policymakers, emphasizing the need for investor education and behavioral interventions to mitigate biases and improve investment decision-making processes.

However, this study is not without limitations. The sample size and the focus on individual investors in India may limit the generalizability of the findings. Future research could explore broader geographical regions and include diverse investor demographics to enhance the robustness of the results. Overall,

this study underscores the importance of incorporating behavioural insights into financial decision-making processes, ultimately enhancing investor welfare and market efficiency in the dynamic landscape of financial markets.

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