European Economic Letters
ISSN 2323-5233
Vol 15, Issue 2 (2025)
http://eelet.org.uk

Impact Of Cognitive Biases On Investment Decisions And Financial Markets

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Abstract
This study is focused in investigating the impact that cognitive biases have on the investing choices made by individuals who are involved in the Indian stock market. Overconfidence, herding, representativeness, anchoring, loss aversion, and confirmation are the six cognitive biases that are investigated in this study. The research is conducted by analyzing a sample of 234 respondents to determine the consequences of these biases. A combination of descriptive and inferential statistical methods were utilized for the purpose of data analysis in the study. According to the findings, a sizeable percentage of people exhibited either high or moderate levels of prejudice, which suggests that this is a problem that warrants concern. The herding and anchoring biases came in second place in the study, while the representativeness bias was found to have the most significant impact on the decision-making process regarding investments. According to these findings, cognitive biases may have a major impact on the decisions that Nepalese individuals make regarding their investments and may have a negative impact on the outcomes of such investments. According to the findings of the study, individuals should acknowledge their own prejudices and take steps to reduce the influence that these biases have on decision-making.

Keywords:
Cognitive bias, Herding bias, Overconfidence, Structural Equation Model

Introduction
In order to develop the most effective portfolios, investors look for possibilities across a variety of industries. To get favorable returns in competitive marketplaces, they often engage in sensible behavior and execute strategic investments. This allows them to attain greater success. The manner in which one behaves with regard to investments can be either rational or illogical, depending on the school of thinking that is accepted. According to Chang (2008), financial theories do not take into consideration the differences in decision-making that vary across investors about their capital. Because of this, behavioral finance should receive the same amount of attention as other areas of finance. This sheds light on the ways in which cognitive bias might impact the decision-making processes within the investment community (Baker, 2019). Cognitive biases have a substantial impact on the decisions and behaviors that are made regarding finances. The purpose of this study is to investigate the impact that a number of cognitive biases, notably recency, familiarity, confirmation, and overconfidence, have on decisions that investors make regarding their finances. Because of the phenomenon known as recency bias, investors tend to base their financial judgments on recent events rather than on past facts (Dey, 2016). The occurrence of this phenomenon takes place when the predicted outcome of forthcoming stimuli is dependent on knowledge of the stimuli that are currently occurring. There is a phenomenon known as familiarity bias, which occurs when investors make

financial decisions regarding a certain investment based on their prior knowledge. It demonstrates that investors prefer to make investments that are safe with the money that they have worked so hard to achieve (Speidell, 2009). A person is said to be exhibiting confirmation bias when they actively seek out evidence that supports their own views and points of view. As a result of the overconfidence bias, investors tend to overestimate their capabilities and performance by relying on misleading information and having the perception that they are more capable than other people. The atmosphere has been made more ambiguous as a result of the introduction of Covid-19. Within the constraints that are given by Covid-19, the purpose of this research is to investigate potential cognitive biases and financial judgments (Nurcahya, 2021).

The purpose of this study is to investigate the relationship between the prejudices listed above and the choices that Indian investors made regarding their finances during the period of Covid-19. This study is motivated by the fact that, in India, the focus has primarily been on traditional finance and its theories (Levy, 2020). These theories, while relevant, do not completely contain the entire nature of investor behavior. This is despite the fact that there have been numerous ground-breaking research initiatives in behavioral finance all over the world. Based on the literature review, it has been determined that the majority of research on behavioral finance in India has been undertaken during the pre-Covid era, whereas just a few studies have been carried out during the post-Covid time (Lathe, 2020). In addition, these works highlight the importance of doing a more in-depth investigation of cognitive biases and behavioral finance. Consequently, academics, researchers, practitioners, financial analysts, politicians, investment firms, and banks undervalue behavioral finance and the subsequent benefits or losses sustained by neglecting to adapt portfolios for customers based on their psychological disposition. It has been argued that businesses and investors who make use of behavioral finance theories have a greater chance of remaining relevant in the investing industry (Kwatra 2020).

Literature Review

Within the framework of belief-adjustment theory, the sequence of information presentation is utilized to investigate the impact that recency bias has on the decision-making process of an investor. The formation of a mixture that results in recency bias in the financial evaluations of an investor is brought about by the sequential presentation of both favorable and unfavorable news. Recency bias refers to the tendency of investors to revise their original evaluations and then proceed to make judgments based on newly available information subsequent to the initial evaluation (Jain, 2019). This demonstrates a change in the manner in which an investor handles their finances and the choices they make as a result of the modification of their previous beliefs brought about by recently acquired facts. The tendency of investors to focus their attention on the most recent data is known as recency bias. The presentation of information in a sequential fashion causes investors to experience recency bias, which in turn influences their financial decisions (Chauhan, 2022). When compared to their male counterparts, female investors have a stronger tendency to participate in the phenomenon known as recency bias. Depending on their level of education and skill, investors exhibit a variety of distinct and distinct actions and judgments regarding financial matters. Behavioural shifts have been observed among investors who are both knowledgeable and experienced (Bansal, 2020).

As a result of familiarity bias, investors choose to invest in the stocks of related companies. Among investors, it is present, and it influences the financial decisions that they make on the purchase of stocks in the market (Čuláková, 2017). It has been demonstrated that investors have a preference for familiar assets, which influences the decisions that they make regarding their

finances. In addition to geographic location, gender is a factor that contributes to familiarity bias and its influence on the financial decisions that investors make. In terms of levels, the United States of America exhibits the highest, while Asia demonstrates the lowest. According to the findings of the research, there is a familiarity bias in the financial decision-making process of American investors and enterprises based in the United States. The authors came to the conclusion that investors in Egyptian markets had dramatically different financial estimates due to the familiarity bias. The majority of investors in European financial markets do not allow familiarity bias to interfere with their decision-making process (Kalm 2018).

Investors' financial and trading actions are influenced by the knowledge received from virtual communities, which in turn affects the investors' current perspectives. The confirmation bias makes judgment more difficult. Even with the assistance of decision algorithms, it continues to be a problem among investors and has an impact on the choices they make regarding their finances. Confirmation bias has a significant impact on the decisions that men make with their finances, and men are more susceptible to it (Putri, 2020). Despite the fact that investors have epistemic authority, this authority is constrained by confirmation bias. Additionally, this is noticed among individuals who participate in internet chat groups. The confirmation bias that investors exhibit is a phenomenon that opposes their thoughts on psychological distance, which in turn influences the judgments that they make regarding their finances. According to Von Bergen and Bressler (2018), individuals who participate in entrepreneurial ventures regularly reevaluate the ideas they already have in place before making financial commitments. In the process of making decisions, investors exhibit confirmation bias, which influences their decision-making process and, as a result, helps to perpetuate the status quo. Significant amount of money A substantial favorable correlation with confirmation bias is observed among Gujarati Indian investors when it comes to the process of investing. As soon as behavioral biases such as confirmation bias are identified, Indian investors immediately put corrective mechanisms into place to guarantee the highest possible results (Pradhan, 2021).
The phenomenon known as anchoring bias refers to the tendency of individuals to base their estimates on an initial value or anchor, which is then altered in order to arrive at the final response. It is common practice for individuals to construct estimations by beginning with a basic figure, which is then updated in order to obtain the anticipated result. This particular cognitive heuristic process is referred to as anchoring. Initial public offering (IPO) prices are frequently set higher than the value of the asset itself, and this kind of overpricing is typically not corrected by future market forces. Based on their findings of Mohamed (2022), they came to the conclusion that anchoring bias could lead to overpricing. This is because investors might become fixed on the initial offering price and show a reluctance to modify their expectations in light of new information.

The term "loss aversion bias" describes the tendency of individuals to demonstrate a greater sensitivity to a decrease in their capital than to a rise in it. The pursuit of gains is not as important to individuals as the avoidance of losses, which is a prominent propensity that people exhibit (Ahmad 2020). It is possible for people's resource management and reactions to variations in asset value to be influenced by their loss aversion when it comes to making decisions regarding investments. In order to avoid incurring a loss, investors who are risk averse may choose to hold on to investments that are not performing well for a longer period of time in the hope that they will eventually recover. Odean (1998) found that individual investors frequently sold successful equities before they were ready, whereas they kept unprofitable shares for an excessive amount of time but sold profitable stocks far earlier. As a result of his findings, he

came to the conclusion that loss aversion is likely to be the cause of the "disposition effect," when individuals may be more motivated to avoid losses than to chase potential profits.

Methodology

The research was conducted with the intention of utilizing a convenience sampling strategy in order to investigate the impact that cognitive aspects have on the financial decisions made by Indian investors. The study focused on individual investors who were actively engaged in the market in a number of cities in India. It is assumed that the individuals who participated in the research provided truthful responses to the questions that were asked in this context. For the purpose of meeting the requirements of the research project, a sample questionnaire was developed in order to collect data from primary sources. Out of the total of 250 surveys that were distributed, 230 were finished, which is equivalent to nearly 92% of the total. A comprehensive analysis revealed that thirty of the completed surveys contained gaps, either in terms of demographics or specific topics. These gaps were determined to be incomplete across the board. The sample was finally made up of two hundred individuals.

Research hypothesis

There is no statistical difference between overconfidence bias of the investors and investment decision making in financial markets

There is no statistical difference between herding bias of the investors and investment decision making in financial markets

There is no statistical difference between confirmation bias of the investors and investment decision making in financial markets

Analysis

The following are the analysis using IBM SPSS statistical package

Gender	Frequency	Percent
Male	78	55.7
Female	62	44.3
Age	**Frequency**	**Percent**
18 - 25 years	42	30
26 - 35 years	46	32.9
36 - 45 years	21	15
Above 45 years	31	22.1
Nature of Industry	**Frequency**	**Percent**
Accounting department	65	46.4
Auditing services	51	36.4
Consultancy and others	24	17.1
Type of Family	**Frequency**	**Percent**
Nuclear Family	82	58.6
Joint Family	58	41.4
Level of Management	**Frequency**	**Percent**
Lower Level Management	63	45
Middle Level Management	35	25
Top Level Management	23	16.4
Entreprenuer / Business Owner	19	13.6
Work experience	**Frequency**	**Percent**
Less than 3 years	37	26.4
3 - 6 years	39	27.9
6 - 9 years	26	18.6
9 - 12 years	27	19.3
Above 12 years	11	7.9
Total	140	100

There are 78 males in the sample, which accounts for 55.7% of the total population, and 62 females, which accounts for 44.3% of the entire population. This suggests that there is a well equal representation of both sexes, despite the fact that there is a greater proportion of male responses. Regarding the age range of the respondents, the bulk of them, 32.9%, are between the ages of 26 and 35, while thirty percent are between the ages of 18 and 25. There are just 22.1% of the sample that are older than 45 years old, while within the range of 36 to 45 years old, there are only about 15% of people. There are 46.4% of respondents who are employed in the accounting department, and 36.4% of them are engaged in auditing services. This is according to the distribution of the industry. 17.1% of the workforce is employed in the financial and consulting industries, along with other service-related fields. This indicates that these industries are heavily represented. Joint families make up 41.4% of the sample, while nuclear families make up 58.6% of the sample. This indicates that the respondents have a preference for smaller family units.

With regard to the various levels of management, twenty-five percent of the respondents are employed in middle-level management positions, while forty-five percent are employed in lower-level management jobs. A lower percentage of those in top-level management (16.4%) and business owners or entrepreneurs (13.6%) are among those who contribute to the survey. There is a fairly even distribution of work experience; the majority of persons have between three and six years of experience (27.9%), closely followed by those who have less than three years of experience (26.4%). Only 7.9% of persons with more than 12 years of professional

experience are in possession of this level of competence. The frequency decreases gradually with those with greater skill. There are a total of 140 individuals that have responded.

R	R Square	Adjusted R Square				
.900a	.907a	0.822				
ANOVA	**Sum of Squares**	**df**	**Mean Square**	**F**	**P Value**	
Regression	151.079	3	50.36	209.681	.000b	
Residual	32.664	136	0.24			
Total	183.743	139				
Regressions	**B**	**Std. Error**	**Beta**	**t**	**P Value**	
(Constant)	0.245	0.158		1.547	0.12	0.085
Overconfidence Bias	0.373	0.081	0.372	4.596	0.00	0
Herding Bias	0.295	0.084	0.318	3.5	0.00	0
Confirmatory Bias	0.255	0.071	0.262	3.581	0.00	0.001
a Dependent Variable: Investor Decision						

The regression model, which has a value of R equal to 0.900, reveals a strong fit and a considerable correlation between the variables that are dependent and those that are independent. While the R Square score of 0.907 indicates that the model accounts for almost 90.7% of the variance in the dependent variable, the Adjusted R Square value of 0.822 indicates that the model is robust despite the changes that were made. With a F value of 209.681 and a p-value of 0.000, the analysis of variance table reveals that the regression model is highly significant than the other models. It can be deduced from this that the independent factors, which include Overconfidence Bias, Herding Bias, and Confirmatory Bias, have a significant impact on the dependent variable. According to the results of the regression analysis, the constant (B = 0.245) has a p-value of 0.12, which indicates that it does not contribute significantly to the prediction and does not meet the criteria at all for statistical significance. Statistically significant predictors include Overconfidence Bias (B = 0.373), Herding Bias (B = 0.295), and Confirmatory Bias (B = 0.255). These biases have t-values of 4.596, 3.5, and 3.581, respectively, and p-values that are less than 0.05. This evidence suggests that each of these biases has a significant and favorable impact on the variable that is being studied (the dependent variable)

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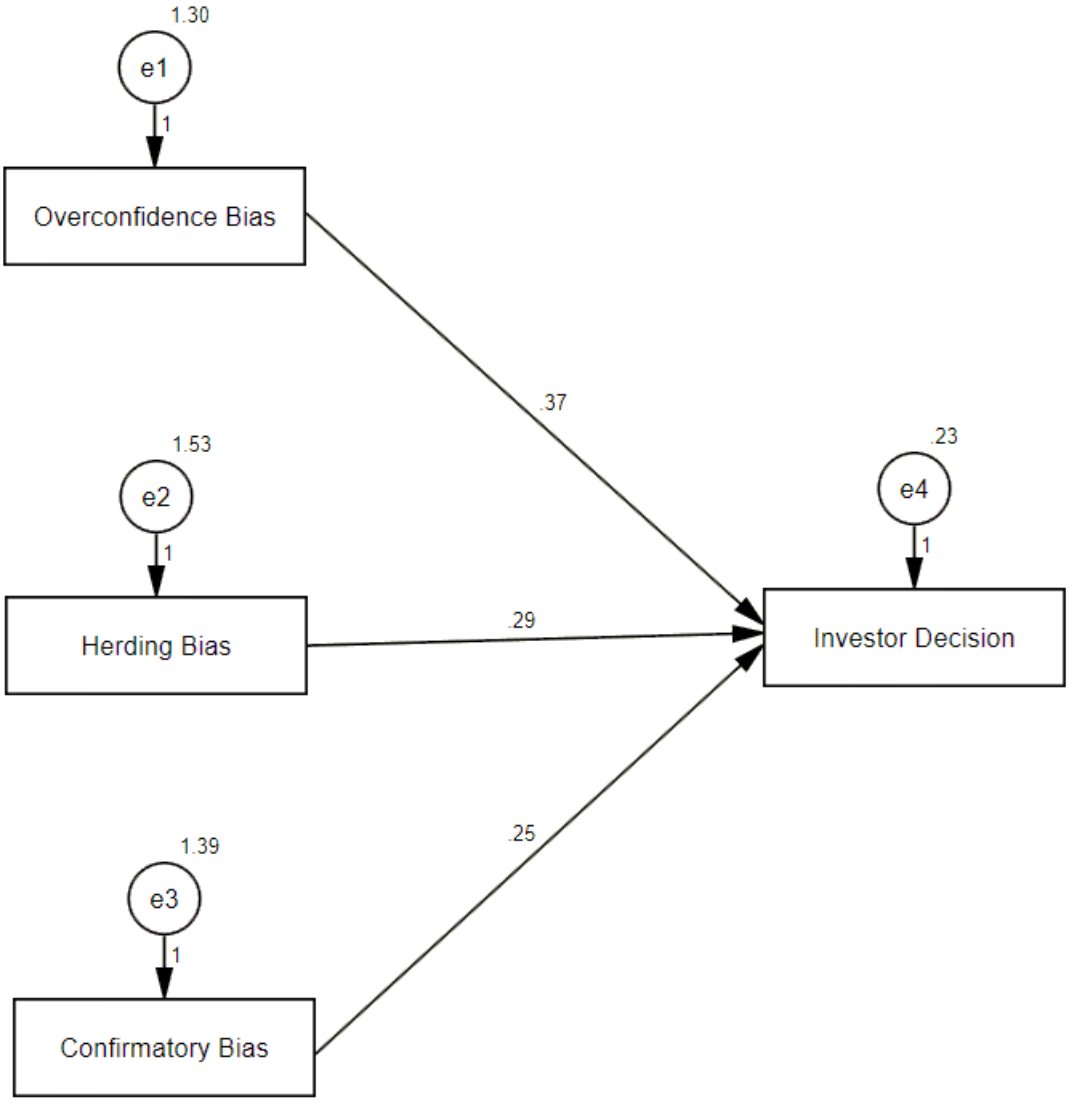
http://eelet.org.uk



An illustration of the interaction between investor decision-making and the cognitive biases of overconfidence, herding, and confirmation is shown by the structural model of the image. The route coefficients provide an indication of the effectiveness of the connections that exist between biases and investment choices. The Overconfidence Bias, which has a path coefficient of 0.37, has a significant and positive impact on the decisions that investors make. Herding bias has a path coefficient of 0.29, which indicates that there is a positive association between the two variables. The fact that the coefficient for confirmatory bias is 0.25 demonstrates that it has a slight but significant impact on the outcome. The unaccounted volatility in each variable is completely encapsulated by the residual errors, which are indicated by the letters e1, e2, e3, and e4. The values at e1 (1.30), e2 (1.53), and e3 (1.39), respectively, exhibit very low levels of variance in the biases that cannot be explained by any other factor. A smaller residual variance for Investor Decision (e4 = 0.23) indicates that the three biases are responsible for a large percentage of its volatility. This is indicated by the fact that the residual variance is lower. In the model, it is demonstrated that the three types of bias—overconfidence bias, herding bias, and confirmatory bias—have a significant impact on the judgments that are made regarding investments.

Dependent variable	Independent variable	Estimate	S.E.	C.R.	P
Investor decision	Overconfidence Bias	0.373	0.036	10.39	0.00
Investor decision	Herding Bias	0.295	0.033	8.902	0.00
Investor decision	Confirmatory Bias	0.255	0.035	7.339	0.00

The scanning electron microscope (SEM) Overconfidence bias appears to have a substantial impact on the decision-making process of investors, according to the findings of the research. The critical ratio (C.R.) is 10.39, and the standard error (S.E.) is 0.36. This indicates that the estimate of 0.373 gives the impression that there is a positive correlation between the two variables. When the p-value is 0.00, it indicates that this propensity has a considerable impact on the decisions that are made regarding investments. According to the estimate of 0.295 and the standard error of 0.033, Herding Bias has a significant impact on the decisions that are made about investments. The critical ratio of 8.902 suggests that there is a significant influence, and the p-value of 0.00 supports the statistical significance of this association. A further key factor that influences investment decisions is the phenomenon known as confirmation bias. The critical ratio is 7.339, and the estimate is 0.255. The standard error is 0.035, and the critical ratio is used. The fact that the p-value for the Confirmatory Bias hypothesis is 0.00 implies that it has a significant and favorable impact on the decision-making process of investors. Every bias contributes to an increase in the value of each investment decision.

Discussion

Cognitive biases affect investment decisions, often leading to systemic judgment errors that can significantly effect individual investors and the wider financial markets. The study examines the influence of three primary cognitive biases—overconfidence, herding, and confirmation biases—on investment behavior, highlighting their effects on rational decision-making processes. These biases are interconnected phenomena that produce behavioral patterns capable of creating financial inefficiencies, bubbles, and potential disasters. Overconfidence Bias manifests when investors exaggerate their knowledge, forecasting skills, or influence over financial markets. This bias results in investors overvaluing their investments, often leading to excessive trading, insufficient portfolio diversification, or misjudgment of risks (Amer, 2023). In the realm of financial markets, overconfident investors believe they can time the market, leading to speculative trading and increased volatility. The analysis indicates that overconfident investors tend to retain failing equities excessively, expecting a reversal that may not happen, while also selling winning stocks early, leading to suboptimal outcomes. The overconfidence bias can exacerbate market volatility, as numerous overconfident investors acting simultaneously may lead to price deviations from intrinsic values. Empirical studies have linked overconfidence bias to elevated trading volumes. Overconfident investors engage in excessive trading, often based on the mistaken belief that they possess superior information or insights. This behavior increases transaction costs and taxes, hence diminishing profits over time irrespective of market success. Moreover, overconfidence can induce asset price bubbles as investors collectively inflate prices based on excessively optimistic predictions (Levy 2020).

Herding Bias refers to the inclination of investors to conform to the actions of a larger group, despite possessing independent information or divergent perspectives. The herding effect is

particularly pronounced during periods of market exuberance or panic, when investors conform to the crowd instead of conducting independent research. This behavior can induce illogical price fluctuations, exacerbating market bubbles and collapses. The essay highlights that herding behavior is often driven by the apprehension of missing potential profits in robust markets or the risk of financial loss in declining markets. Herding investors may rationalize their actions by believing that the majority possesses superior information (Lathe 2020). This bias can result in the formation of speculative bubbles, as seen by the dot-com bubble and the housing market crisis, as investors persistently purchased expensive assets driven by market sentiment rather than intrinsic value. Herding has substantial implications for market efficiency. In principle, efficient markets should encapsulate all accessible information; nevertheless, herding behavior undermines this concept by generating price trends that diverge from underlying values. Under extreme conditions, herding can exacerbate financial instability by provoking market overreactions, both upward and downward, leading to boom-and-bust cycles with significant economic repercussions (Kwatra 2020).

Confirmatory Bias is the inclination of investors to pursue information that validates their pre-existing beliefs while dismissing or overlooking contradictory facts. This bias affects investors' information processing, leading them to favor data that corroborates their preexisting assumptions regarding a particular stock or market condition. It often leads to selective perception, when investors do not modify their decisions despite encountering new, conflicting information. In financial markets, confirmation bias may perpetuate ineffective investment tactics. Investors influenced by this tendency may retain depreciated assets longer than rationality dictates, convinced that their initial evaluation will ultimately be validated. Conversely, they may persist in holding advantageous positions, expecting additional profits despite signs of a market correction (Jain 2019).

Confirmatory bias can also affect investors' perceptions of market news and analyst reports. If an investor feels bullish about a stock, neutral or slightly negative news may be perceived positively, reinforcing their decision to retain or acquire additional shares. When investors collectively disregard warning signs of market overextension, it may lead to overvaluations and the formation of asset bubbles

Conclusion

The essay underscores the significance of Overconfidence Bias, Herding Bias, and Confirmatory Bias in influencing investor behavior and market dynamics. These biases induce systemic judgment errors, leading to market inefficiencies, speculative bubbles, and collapses. Overconfidence stimulates excessive trading and volatility, herding generates irrational market patterns, and confirmation bias results in selective perception, obstructing prompt adjustment. Investors and regulators must acknowledge and rectify these biases to foster more stable and rational financial markets..

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