

INFLUENCE OF BEHAVIOUAL BIAS ON INVESTMENT DECISIONS OF INDIVIDUAL INVESTORS IN DELHI NCR

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Abstract: *This paper identifies the behavioural bias of individual investors in Delhi NCR. Investment decision plays a significant role in one's life and it is affected by various factors, behavioural bias being one of the most important factor. It is a complex process. As far as risk is concerned, human behaviour has changed drastically over the time and an effort has been made to explore its effect on investment decision. A interview and well structured questionnaire will be distributed among 352 investors to know their behavioral bias score and its impact on investment decision.*

1. INTRODUCTION

Behavioural Finance as a discipline tries to explain and increase understanding regarding how the cognitive errors and emotions of investors influence the process of decision making. It is a study of individual and group emotions and the impact of thus behaviour on the financial market. People's perceptions of the market directly impact price movements and trends. e.g. 'Charm Prices helps to increase sale of a product. It is also necessary to focus upon how investors interpret and act on information to make informed investment decision. There is a need to study the individual and group emotions and the impact of their behaviour on the financial market. We are living in the Globalization era, where finance plays a vital role. It is a valuable consideration for all significant decision making. Everyone knows the significance of saving. Investment involves proper channelizing of saving. The value of money also depreciates if it is not put to be invested; this is due to many factors such as value of money decreases with the passage of time. Money is the queen of all discoveries. Investment refers to the process of obtaining funds by building up operations or buying investment products such as stocks, bonds and annuities. The process of investment decision encapsulates identification of problem, search for alternatives, evaluation of various options and constructing a portfolio. "Decision making under risk and uncertainty is one of biggest topics discussed by both psychologist and economist" (Lowenstein et al 2001).

The modern theory of decision making relating to investment under risk and uncertainty is very complication. Presence and behaviour of anomalies continue to violate the fundamental behaviour of the financial markets which assumes that all investors are logical and behave rationally. It was suggested by the proponents of behavioural finance that while most of the biases will not be simultaneously present in all investors, however some or the other bias will be prevalent impacting the financial market in general.

Objectives:

- To study the investment pattern in India.
- To understand the behavioral biases of individual investor of Delhi NCR .
- To analysis the impact of behavioral bias on investment decision .

2. LITERATURE REVIEW

A review of literature consigns a research study in proper perspective by showing the quantity of work already carried out in the related area of the study. The purpose of this part is to understand the results of various studies already undertaken in the relevant field.

Byder,J, Agudelo, D.A & Arango I (2019) examines the way investors in an emerging market react to a domestic financial crisis. It was conjectured that risk aversion increases following such events. The paper described manner in which financial crisis affect risk preferences of investors in emerging markets.

Jacob Niyoyita Mahina, Willy Mutori, Memb & Florence (2017), studied the effect of behavioural biases on investment in stock exchange. As per Kaur I and Kaushik (2016), Mutual fund in India is not a favorable investment alternative as in developed countries. As per Thaler R. (2016), A paradigm shift can happen due to the failure of orthodox ideas and policies or when new technology is introduced that radically alters the production process. Coffie William (2013), reveal the main issues of individual stock investors and examine whether there is any positive correlations between major stock investment strategies and behavioural finance theories. William N. Goetzmann and Alok Kumar (2008), Commented on diversified portfolio. Diversified choices of more than 60,000 individual investors were analyze at a large US discount brokerage house. Campbell John Y and John H. Cochrane (1999), Presented a consumption based model that explains the pro-cyclical variation of stock prices. Thaler R. (1985), framed a new model of consumer behaviour using a hybrid of cognitive psychology and micro economy. Kahneman D. and Trersky A. (1979), criticized the expected utility theory and an alternative model called prospect theory was developed. A prospect is a contract that yields outcome n , with probability P_i , where $P_1 + P_2 + \dots + P_n = 1$.

Sharpe W C (1964) predicts the behaviour of capital market in the absence of a body of positive micro-economic theory dealing with conditions of risk. Friedman M, and I J Sarage (1948) suggested that an important class of reactions of individuals to risk can be rationalized by a rather simple extension of orthodox utility analysis. He usually chooses certainty in preference to uncertainty.

Syed Aliya Zahera, Rohit Bansal (2018), the aim of the study was to understand and describe various biases in investment decision making – A new Era of understanding of human emotions, behaviour and sentiments has been started and the study had identified different types of biases. According to Ashby, N.J.s., Rakow, T & Yechiam, E (2017) Re-framing a certain zero option as an option to observe the results of other options without choosing would lead to increased selection of risky options rather than the zero option. Katherine D, Arbuthnott, Andrea Scerbe (2016) examined whether goal framing also influences decisions about public resources such as economic development. It was revealed that decisions bias associated with goal framings applies to decisions

about public as well as personal resources. Results also indicated loss aversion higher ratings when losses associated with failing to adapt development were emphasized. Eyal Ert, Ido Erev (2013) highlighted the six specific conditions that trigger the pattern predicted by the loss assertion. It was also suggested that the contingent nature of loss aversion should be considered in the analysis of field data. Benjamin E. Hilbig (2012), proposed a multinomial processing tree model¹⁴ to distinguish between differences in (i) knowledge or (ii) response bias that accounts for the framing effect. Application of model revealed that the effect of framing can be considered as a bias: Given insufficient knowledge, individuals are more likely to guess “tree” when faced with a negatively framed statistical statement. More Van Buiten, Gideon Keren (2009), examined preferred message framing of and its correspondence persuasiveness was assessed with the help of listeners responses. The results revealed that speakers exhibit a marked and consistent preference for positive framing over negative. Born, J and J.C. Hershey (1988), explored the evidence of outcome bias in an economic game experiment consisting of two player where reward allocated was to be made.

Atkars M, Evangelopoulos N, Davur R. S. Kulkarni (2019), investigated Six cognitive biases resulting from the use of the representativeness Heuristics less than 50% of the respondents made biased decisions. Results showed that in all six scenarios. Magdalena Mikolajek- Gocejna (2017), studied Complexity of capital market causes that people use heuristics, it also explains the reasons for the market to act in an irrational manner. Anomalies in economic theory lead to the formation of behavioural finance.

Montibeller G, Detlof von Fedt Winterfeldt (2015), identified the cognitive and motivational biases that are relevant for decision and risk Analysis. Peer E. Gammeli (2012), found that The participants used the percentage heuristic more often, perhaps because it predicated linearly, increasing values of time small when speed is increased. As per Jordi Caballe, Kobsef Szekovics (2003), Two components of self confidence in a financial market were distinctive private self confidence measures the self confidence of speculators, while public self confidence measures the self confidence, they attribute to their competitors. A model of trading was presented where the underlying beliefs are not different.

3. RESEARCH METHODOLOGY

The research primarily descriptive in nature and qualitative in approach. The research will use make use of various methods like questionnaire, interview with expert and information available on the sites of various stock exchange in India. Random sampling method will be used. Sekaran (2003) stated that personally administer the questionnaire is a good choice when conducting the survey in a local area. The data for the study will also be collected from the site of stock exchange.

Delhi NCR (National Capital Region) has been selected as study area. Random Sampling was selected for the study, the findings reported are based on a survey that was developed and tested over a period of six months (April 2019 – September 2019). The sample size for the final study consists of 352 respondents

4. CONCEPTUAL FRAMEWORK

Economic Approach to Investor Behaviour

In economic theory of investment decision making, the investment decision of the individual investor is treated as a macroeconomic aggregate and intertemporal wealth criteria while making a choice between consumption and investment through time. The theory assumes rational behaviour of investor. The theory of expected utility was introduced by Bernoulli, D in 1738. The expected utility is calculated by adding the weighted average of all possible outcomes with the weights being assigned by probability under certain situation. Traditional finance has dominance in the market. The body of knowledge was built on the pillars of arbitrage principles of Miller and Modigliani, the portfolio principle of Markowitz, capital assets pricing model (CAPM) of William Sharpe, Linter and Black and option pricing model of Black and Scholes, and Merton (Statman, 1999).

Arbitrage principle of Miller and Modigliani (1958)

According to the theory, a company can attain an optimum capital structure consisting of a mixture of debt and equity. The company can gain from this mixture due to its ability to minimize its weighted average cost of capital, thereby maximizing its market value. By purchasing and assets at a lower price in one market and selling it immediately at higher price in the other market, the investor can make an arbitrage gain.

Portfolio Principles of Harry M. Markowitz (1952, 1959)

Harry M. Markowitz developed a model which is theoretical framework for analysis of risk and return and their inter-relationships. It has been created with introduction of new concepts of risk measurement and their application to the selection of portfolios.

Mean-Variance Portfolio Theory

According to Markowitz mean - variance portfolio theory, rate of return on assets is modeled as random variable. The aim of investor is to choose the portfolio weighting factors optimally. An optimal set of weights is one in which the portfolio achieves an acceptable baseline i.e. expected rate of return with minimum volatility.

Capital assets pricing model by William Sharpe (1964) and Linter (1965)

The model is useful for determining a theoretically appropriate required rate of return of an asset, which aids in decision making regarding adding assets to a well-diversified portfolio. CAPM developed a way to measure systematic risk.

Option pricing theory

It is primarily a mathematical model, use that makes use of variables like stock price, exercise price, volatility, interest rate and expiration time to theoretically value an option. Black-Scholes-Merton model was the first model, which was widely used for option pricing.

Capital Market Efficiency

Capital Market efficiency is a measure of how quickly and completely the price of a single asset reflects all available information regarding the asset's value.

Criticism

Accordingly to these standard finances theories, people value wealth, investors act rationally while making financial decisions and investors would like to maximize their expected utility. Kahneman and Tversky (1971, 1979) and Slovic (1972) had challenged the rationality assumption and served the foundation for behaviour finance theories.

Behavioural Finance

Behavioural Finance is thus, a combination of behavioural and cognitive psychological theory with conventional economics and finances. It is a sub field of behavioural economics, which proposes psychology based theories to explain stock market anomalies, such as, service rise or falls in stock price. It focuses upon how investors interpret and act on information to make informed investment decision. It was also found that either market was not as efficient as once purported or that the assets during models were inadequate.

According to Pompian (2006), behavioural finance has two sub topics – Behavioural Finance Micro – It analysis behaviour or biases of individual investors that distinguish them from the rational actors envisioned in classical economic theory. Behavioural Finance Macro – It detects and describes anomalies in efficient market hypothesis that behavioural model may explain.

5. TYPES OF BIASES

Frame Dependent Biases: Framing is the way in which a question is structured with regard to the issue being evaluated. It implies how a concept is presented to individual matters

Prospect Theory. As per Tversky and Kahneman (1981). “Prospect theory and the scales should be viewed as an approximate, incomplete and simplified description of the evaluation of risky prospect.

Loss Aversion. Kahneman and Tversky (1979) explained the degree to which investors are averse to taking losses. According to it, the impact of loss is 2-5 times more than the impact of gains of the same magnitude.

Mental accounting. Mental Accounting was proposal by Richard Thaler. It describes the tendency of people to place particular events into different mental accounts based on superficial attributes, for example, some people keep a special “Money jar” or similar fund set aside for a vacation on a new home while at the same time corresponding substantial credit card debt. For example, some people keep a special “Money jar” or similar fund set aside for a vacation on a new home while at the same time corresponding substantial credit card debt.

Disposition Effect. It relates to the tendency of investors to sell assets that have increased in value, while keeping assets that have dropped in value.

Cognitive Dissonance. With regard to investment decisions, cognitive dissonance can be regarded as pain of regret stemming from wrong beliefs.

Regret Aversion. Regret averse people may fear the consequence of both errors of omission (e.g. not brought the right investment property) and commission (e.g. buying the wrong investment property) (Seiler et al, 2008).

Heuristics and Biases: The term “heuristics” is a way of teaching by encouraging students to learn through doing and discovery things themselves rather than telling them about thing. It widely consists of Representatives. The representative`s heuristics is commonly used while making judgments concerning the probability of an incident under uncertainty. According to Kahneman and Riepe (1998), “The Human mind is a pattern seeking device and is strongly biased to adopt the hypothesis that a casual factor is at work behind any notable sequence of events.

Overconfidence. Overconfidence can lead an investor to experience issues as he may not prepare properly for a scenario or may get into a dangerous situation that he’s not equipped to handle. Investors may not be aware that the available information is not adequate to develop an accurate forecast in uncertain situations and hence, can enter in a risky investment.

Availability bias. The availability bias is the tendency of humans to assume the examples of things that come readily to mind i.e without any delay are more representative than is actually. It hampers critical thinking. It ignores any defected study of past events and thereby become biased to the latest news because of this bias, our perceptions of risk may be in error and we might wrong about the wrong risk.

Anchoring. Anchoring is a cognitive bias. It occurs when, during decision making, an individual relies on an initial piece of information to make subsequent judgements .

Endowment Effect. Endowment effect implies the finding that people are more likely to retain an object they own than acquire that some object when they do not own it. For example – People who inherit shares of stock from deceased relatives exhibit the endowment effect by refusing to divert those shares, even if they do not fit with that individual’s risk tolerance or investment goal and may neglect impact of portfolio’s diversification.

Conservatism. In cognitive psychology and decision Science, Conservatism bias is a bias in human information processing, which refers to the tendency to revise ones belief insufficiently when presented with new evidence. People prefer to stay on the things have normally been.

6. ANALYSIS AND INTERPRETATION

It can be observed that majority of respondents were male (81.818%) and were married (83.806%). Majority of respondents were below 30 years of age constituting 53.409%. Most of the respondents were well qualified. 24.715% of them are doctorate, 39.488% postgraduates, 30.397% graduates, while only 5.397% are below graduation.

Most of the respondents belong to middle income class constituting 57.95% of the population.

Table 1.2 Behavioral bias of Investors

Question no	10	11	12	13	14
Not at all	19	43	6	20	3
Not too much	26	105	67	77	26
somewhat	113	138	140	170	44
highly	148	43	115	62	117
extremely	46	23	24	23	162
Total	352	352	352	352	352

Question 10 measures herd bias, majority of them are highly biased and question 11 measures overconfidence bias, majority of investors are somewhat biased (39.204%). Question 12 and Question 13 measures availability bias and mental accounting respectively and majority of investors are somewhat biased.

ANOVA

ANOVA test is used to find the influence behavioral bias of the respondents on their investment decision.

Hypothesis

H0: There is no significant difference between behavioral bias of the respondents and its influence on their investment decision.

H1: There is a significant difference between behavioral bias of the respondents and its influence on their investment decision

Decision criteria

Reject the null hypothesis (H0) if the level of significance is less than 5%.

Table 1.3 Results of one way ANOVA

Sl no	name of bias	F value	level of significance	result
1	Herd bias	11.84	0	significant
2	Overconfidence	11.84	0	significant
3	Availability bias	9.76	0	significant
4	Mental accounting	9.413	0	significant
5	Regret aversion	6.533	0	significant

Source: SPSS Output

7. RESULTS

According to one way ANOVA, there is a significant relation between investment decision and behavioral bias of the respondents i.e. herd bias, overconfidence, availability bias, mental accounting and regret aversion.

8. CONCLUSION

This research paper is an attempt to study the influence of behavioral bias of individual investors in Delhi NCR. Psychology plays a significant role in determining investment behaviour. Hence, the understanding of behavioural bias is important. It was found that on average, all the investors are influenced by behavioural bias to a large extent. Behavioral bias has a significant impact on decision making. It is due to this effect that they avoid taking risk and prefer to invest their money in less risky avenues. Hence, it can be concluded that Awareness and knowledge of various financial products has changed the perception of investors. It was found that there is a significant relation between investment decision and behavioral bias of the respondents i.e. herd bias, availability bias, overconfidence, mental accounting and regret aversion.

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