BEHAVIOURAL BIAS INFLUENCING INDIVIDUAL INVESTORS' DECISION MAKING

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Abstract
In finance there are five pillars in which entire capital market study is based, i.e. Efficient Market Hypothesis, Portfolio Theory, Capital Asset Pricing Model, Arbitrage Principle, and Option-Pricing Theory with an assumption that investors are rational. But these models regularly fail to determine the causes of stock market volatility and value of asset due to limits to arbitrage and behavioural biases, which gives root to Behavioural Finance study since 1990s. Behavioural Finance deals with the psychological and cognitive bias of individual investors' which cause to affect their decision making.

This paper tries to find out all behavioural biases which influence behaviuoral decision making of individual investors in Indian Stock Market. The data are collected by semi-structured questionnaire to Delhi investors'. Questions were asked in the three parts i.e. personal attributes, financial attributes and behavioural biases in Indian stock market. Behavioural bias segregated into three parts i.e. Heuristics, Prospect Theory and Herding. Under heuristics: Overconfidence, Anchoring, Availability, Gambler's fallacy and Representativeness, under prospect theory: Mental Accounting, Loss aversion and Regret aversion and Herding.

Data analyse by summated mean score. Individuals are significantly affected by psychological bias in their financial decision consequently their performance also affected. These psychological biases plays significant role in Individual Investment Decision Making in Indian stock market.

The finding of the study is useful for brokers, Individuals investors, portfolio managers to enable then to make their financial decision as such as can earn optimum return in market.

Keywords: Individual Investors, Heuristics, Psychological Bias, Overconfidence, Stock Market.
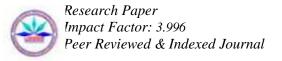
Introduction

Conventional theories of finance such as CAPM, and EMH do a reasonably good job of explaning events in the financial markets and are still dominant in one or the other way. Unfortunately, these theories have consistently failed to explain certain phenomena in the financial markets. The primary reason of the inability of the theories of the conventional finance to explain these phenomena is the assumptions underlying these theories. Conventional finance assume that investors always behave rationally and arbitrage ensures that prices always fully reflect the available information (Barberis & Thaler, 2003). However, this basic assumption of Rationality is questioned by psychologists like Daniel Kahneman and Amos Tversky among others which has led to the development of a new field of study which came to be known as Behavioural Finance or Behavioural Economics.

Behavioural finance studies how financial decision making and in turn financial markets are affected by psychology of the market participants Shefrin (2001). It deals with individual investors' behaviour incorporating psychology, sociology and conventional finance. Edwards (1968), Fischhoff, Slovic and Lichtenstein (1977), Kahneman and Tversky (1974), and Weinstein (1980) among others suggest on the basis of experimental studies that individuals cannot be rational as they are affected by a number of psychological biases. These psychological biases affect how individuals form expectations which in turn affect the investors' decision making (Barberis & Thaler, 2003).

Over the years, researchers in the field of behavioural finance have discovered a large number of biases such as anchoring, heuristics, over confidence, mental accounting etc. For the sake of convenience in study, these psychological biases can be put into three broad heads i.e., Heuristics, Prospect Theory, and Herding.

Heuristics: Heuristics is defined as the rules of thumb, which make it easier for the investor to make investment decisions. These rules of thumb help to reduce the complexity associated with assessment of probabilities and predicting values. There are five components of heuristics: representativeness, availability bias, anchoring, gambler's fallacy and overconfidence.

Overconfidence-It implies that people generally rate themselves as being above average in their abilities. They tend to overestimate the precision of their knowledge compared to others. Many investors believe that they can time the market

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consistently. But there is large amount of evidence which proves the opposite. Tapia and Yermo (2007) observes that overconfidence results in excessive trades by the investors which eats away profits.

Representativeness-It is the tendency to evaluate the probability that an object belongs to a particular class based on similarity of the objects to the class (Kahneman & Tversky, 1974). People suffering from this bias tend to buy stocks based on their past performance.

Anchoring- It is the tendency to fix our thoughts to a reference point (Kahneman &Tversky, 1974). In this cognitive bias, individuals lay too much emphasis on the initial information while making decisions. Investors who suffer from this bias make decisions on the basis of a few benchmarks such as 52 week high/low price or stocks below specific P/E ratios etc.

Availability-Availability bias is the tendency of the investors to give higher probabilities to events which they are familiar with. This is associated with the ease of recall (Kahneman &Tversky, 1974).

Gamblers' Fallacy- Kahneman and Tversky (1971) describe the gambler's fallacy as a misconception on the part of the gambler about the fairness of the laws of chance. Investors suffering from this bias believe that markets cannot go down for a number of years in a row (Montier, 2003). Gamblers' Fallacy arises when investors try to predict trend reversals.

Prospect Theory- Perhaps the most significant contribution in the field of behavioural finance is the prospect theory proposed by Kahneman and Tversky (1979) and Tversky and Kahneman (1992). This theory suggests that people attach different value to gain and loss of same magnitude. Besides, people prefer certain outcomes when it comes to gains and are willing to assume risk when it comes to avoiding losses. Prospect theory describes some states of mind affecting an individual's decision-making processes including: regret aversion, loss aversion, and mental accounting.

Regret Theory- Some investors avoid the possibility of feeling this regret by following the conventional wisdom and buying stocks that everyone else is buying, rationalizing their decision with "everyone else is doing it".

Theory of Mental Accounting- Thaler (1999) has described three components of mental accounting. The first of these deals with perception of outcomes which is followed by decision making and finally evaluation. Second is concerned with mental accounts to which activities are assigned; and the third and the last component is concerned with the frequency of evaluation of accounts.

Loss Aversion- It is well established that losses and gains have asymmetric influences. It implies that the loss of a certain amount gives more pain than the gain of the same amount will give pleasure.

Herding- It is the tendency of following others blindly. Investors suffering from this bias do not rely on their own judgement rather follow others. Stock market bubbles and crashes are a logical consequence of herd behavior.
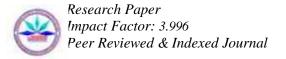
Data and Methodology
The present study is an attempt to explore whether investors in Delhi are susceptible to psychological biases described above. For this purpose, primary data was collected using a structured questionnaire. The questionnaire was administered to fifty individual investors out of which forty four questionnaires were found to be appropriate. Respondents were asked to indicate the degree to which they were influenced by each of the items on a five point Likert scale.

To examine the presence of psychological biases among investors questions regarding Heuristics, Prospect Theory, and Herding were asked. The statements along with their mean value are presented in Table 1. Under the Heuristics five factors are considered namely Overconfidence (S1, S2), Representativeness (S3, S4), Anchoring (S5, S6), Availability (S10, S11) and Gambler's fallacy (S9); under the prospect theory following three factors are considered—Loss aversion (S7, S8), Regret aversion (S12, S13) and Mental accounting (S14, S15); and under Herding (S16, S17) are considered.

Analysis and Interpretation
This chapter deals with data analysis and interpretation of the research findings. The data in this study was coded and tabulated. The data were analyzed using descriptive statistics, mean analysis techniques with the help of SPSS package which enabled data interpretation. Data collected by structured questionnaire analyse by table and mean values. In table demographical variable represented. All the investors reached provided responses and therefore giving a response rate of 88%.

Demographic Attributes of Respondent: Male Gender dominates and more than three fourth respondents are male and almost one fourth is female. When ask about the marital status almost half married and balance single. Regarding age highest investors belong to between 26-35 age group followed by 18-25. When question asked about the highest qualification the respondent replied. In the highest qualification selected for the study is doctorate and professional, respondent covers all the relevant type of educational qualification. In the post graduate is almost half of the respondent followed by graduate is almost one third. Least respondent is in professional i.e. 5%. About the job category, researcher asked six parts, professional, self-employed, public sector, private sector, academician and others. Respondent replied most of the respondent replied in private sector i.e. almost one third followed by professional. Least respondent belongs to self-employed.

Table: 1 Demographic Attributes of Respondent

S.No.	Demographic/Financial Attributes	%age	Frequency
1.	**Gender**		
	Male	77%	77
	Female	23%	23
	Total	100%	100
2	**Marital Status**		
	Single	55%	55
	Married	45%	45
	Total	100%	100
3	**Age**		
	18-25	27%	27
	26-35	34%	34
	36-45	20%	20
	46-55	11%	11
	More then 55	7%	7
	Total	100%	100
4	**Educational Qualification**		
	Up to Schooling	11%	11
	Graduate	34%	34
	Post Graduate	43%	43
	Doctorate	7%	7
	Professional	5%	5
	Total	100%	100
5	**Job Category**		
	Professional	27%	27
	Self-employed	2%	2
	Public Sector	20%	20
	Private Sector	34%	34
	Academician	14%	14
	Others	2%	2
	Total	100%	100

Financial Attributes of Respondent: Income profile of the investors is around one third of the investors belongs to the group of Rs 6,00,000 to Rs 10,00,0000 followed by income group Rs 10,00,000 to Rs 20,00,000 i.e. almost one fourth. When researcher ask about the annual
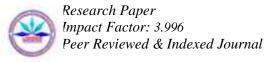
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Table: II Financial Attributes of Respondent

S.No.	Financial Attributes	%age	Frequency
6	**Annual Income**		
	Up to Rs. 3,00,000	7%	7
	Rs. 3,00,001-Rs. 6,00,000	9%	9
	Rs. 6,00,001-Rs. 10,00,000	34%	34
	Rs. 10,00,001-Rs. 20,00,000	27%	27
	More than Rs. 20,00,000	23%	23
	Total	100%	100
7	**Annual Saving**		
	Up to Rs. 1,00,000	7%	7
	Rs. 1,00,001- Rs. 2,00,000	11%	11
	Rs. 2,00,001- Rs. 3,00,000	41%	41
	Rs. 3,00,001- Rs. 4,00,000	27%	27
	More than Rs.4,00,000	14%	14
	Total	100%	100
8	**Have you attended any course of Stock Exchange?**		
	Yes	39%	39
	No	61%	61
	Total	100%	100
9	**How frequently do you invest in equity markets**		
	Intraday	27%	27
	Weekly	30%	30
	Monthly	20%	20
	Semi-Annually	11%	11
	Annually	7%	7
	More than Yearly	5%	5
	Total	100%	100
10	**For how long have you been investing?**		
	Less than 1 Year	34%	34
	1-3 Years	27%	27
	3-5 Years	16%	16
	5-10 Years	18%	18
	More than 10 Years	5%	5
	Total	100%	100
11	**The total amount of money (Rs.) that you have invested at the Indian Stock Market.**		
	Up to Rs. 30,000	5%	5
	Rs. 30,001- Rs. 50,000	11%	11
	Rs. 50,001- Rs. 80,000	16%	16
	Rs. 80,001- Rs. 1,00,000	27%	27
	Rs.1,00,000-Rs 5,00,000	34%	34
	More than Rs 5,00,000	7%	7
	Total	100%	100

savings then most of the respondent replied group Rs 2,00,000 to Rs 3,00,000 followed by income group Rs 3,00,000 to 4,00,000. And least level of saving is upto Rs 1,00,000. In the questionnaire researcher ask about the attendance of any stock exchange course then most of the investors replied no. it means majority of investors have not yet attended any course regarding how to invest in the capital market.

When asked about the frequency of transaction most of the respondent replied weekly almost one third and followed by intraday around more than one fourth and least replied in more than annually. It means most of the investors are active. About the year of investment, mostly replied less than one year followed by one to three year. Asked about the money of investment then 34% replied between Rs 100,000 to Rs 5,00,000 and followed by Rs 80,000 to Rs 1,00,0000 which is 27%. And least of respondent belong to the group of upto Rs 30,000.

Heuristics
Overconfidence- to check the overconfidence of investor two statements were asked. The mean score of statement i.e. "You feel more confident in your own investment opinions over opinions of your colleagues or friends" is 3.6 and in the second statement i.e. "You consult others (family, friends or colleagues) before making stock purchased" is 3.7. This suggests that the respondents exhibit over confidence in their capabilities to make investment decisions.

Representativeness- to check the presence of representativeness among investors the questions asked were: "You tried to avoid investing in companies with history of poor earning", and "You rely on past performance to buy stock because you believe that good performance will continue". The mean of the two statements is 2.6 and 3.1 respectively. The low mean score on the first statement suggests that investors do not suffer from the representativeness bias while the mean score of the second statement suggests the reverse. It can be said that representativeness bias is not very strong among the respondents.

Anchoring- to check the Anchoring bias of investor two statements were asked and and it is found that both these factors have mean score more than three. The mean score of statement i.e. "You are likely to sell your stock after the price hits recent 52-week high." is 3.3 and in the second statement i.e. "You rely on your previous experiences in the market for your next investment" is 3.5. So it can be said that Delhi investors decision making show Anchoring bias.

Availability- to check the Availability bias of investor two statements were asked. The mean score of statement i.e. "You prefer to buy local stocks than international stocks because the information of local stocks is more available." is 3.7 and in the second statement i.e. "You consider the information from your close friends and relatives as the reliable reference for your investment decisions." is 4.1. This indicates that the respondent investors have availability bias.

Gambler's fallacy- to find the presence of Gambler's fallacy the statement asked was: "You are normally able to anticipate the end of good or poor market returns at the NSE/BSE". The mean score of 3.5 for the statement suggests that Gambler fallacy is present among the investors.

Prospect Theory
Mental Accounting- to study the Mental Accounting bias of investor two statements were asked. The mean score of statement i.e. "You tend to treat each element of your investment portfolio separately." is 4.1 and in the second statement i.e. "You ignore the connection between different investment possibilities." is 4.2. This indicates that the sample investors suffer from mental accounting bias.

Regret aversion- to examine the Regret aversion bias of investor two statements were asked. The mean score of statement i.e. "You avoid selling shares that have decreased in value and readily sell shares that have increased in value." is 3.9 and in the second statement i.e. "You feel more sorrow about holding losing stocks too long than about selling winning stocks too soon." is 4.2. Therefore, the sample investors also exhibit regret aversion.
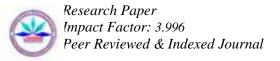
Loss aversion- to study the presence of Loss aversion bias two statements were asked. The mean score of statement i.e. "You are more concerned about a large loss in your stock than missing a substantial gain/profit." is 4.2 and in the second statement i.e. "You feel nervous when large paper losses (price drops) have in your invested stocks." is 3.9. It implies that Loss Aversion is there among the investors.

Herding
To check the Herding bias among investor two statements were asked. The mean score of statement i.e. "Other investors' decisions of buying and selling stocks have impact on your investment decisions." is 3.7 and of the second statement i.e. "You usually react quickly to the changes of other investors' decisions and follow their reactions to the stock market." is 3.8. Therefore, Herding is also present among the investors.

Findings & Conclusion
Behavioural finance is borne out of the need to explain the anomalies which traditional finance could not. Over the past few decades a number of psychological biases have been discovered which affect individual investor's decision making.

The presence of these psychological biases challenges the assumption of rationality maintained by almost all the theories of conventional finance. The present study is an attempt to find out the presence of these psychological biases among investors residing in Delhi. Data was collected from 44 investors with the help of a structured questionnaire. The results of descriptive analysis suggest that investors exhibit all the biases documented in literature of behavioural finance.

Conventional theories of finance are not able to explain all the phenomena in the financial marketplace. However, this does not mean that conventional finance is useless. Rather, it suggests that while making financial decisions if psychological factors are also considered then individuals can make better investment decisions.

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