

AN ANALYSIS OF THE IMPACT OF BEHAVIOURAL BIASES ON INVESTMENT DECISION

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Abstract: Behavioural Finance deals with analysis of several psychological and cognitive factors that influence decision making of investors while investing. It considers investors psychology while making investment decisions by considering the most basic fact that human decisions are sentimental driven. It denies the hypothesis of rational decision making and lists out the psychological biases like herding, overconfidence, mental accounting, loss aversion etc. The present study explores the influence of these biases on investment decisions. This study tries to find the correlation between these biases and investment performance. Also, tries to know the significant difference on average score of behavioural biases based on variables like age, job experience and investment experience of an individual. Primary data would be collected using questionnaires from the investors in the Rajkot city.

Keywords: Behavioural Finance, Herding, Loss Aversion, Mental Accounting, Over-confidence.

INTRODUCTION

India has arisen as the fastest growing economy in the world and is expected to be one of the top economic powers of the world. With the enhancement in the economic scenario, there has been various investments in various sectors of the economy. The rationality of investors became arguable in investment avenues. Behavioral Finance emerged as a branch of social psychology that captures the human side of decision making. Sewell, M, 2010-11, explains that behavioural Finance deals with the influence of psychology on the behaviour of the

individual investors and its consequent impact on stock market. This study focuses on checking the influence of investors with respect to their investment performance while making investment decisions in Rajkot city of Gujarat, India.

If we consider traditional finance, then the individual investor is rational because it makes all the decisions based on available information. But on the other hand, in Behavioural finance investors are psychological based which affects the individual human behaviour regarding investment decisions. Traditional finance ignores the impact of emotions of the investors regarding investment decisions and shows irrational behaviour due to different situations which leads to wrong judgments (Babajide and Adetiloy, 2012). Whereas behavioural finance considers investors psychology while making investment decisions. Behavioural finance takes the most basic fact that human decisions are sentiment driven. This makes people suffer from certain psychological factors which prove to be unfavourable in the stock market.

LITERATURE REVIEW

In today's time, there has been a significant evolution in the field of behavioural finance. The literature on behavioural finance is extensive, including survey and secondary data analysis.

1. Overconfidence:

Overconfidence is a well-known and common bias which makes people too confident about their wisdom and skills, and neglect the risk associated with investment. Overconfidence has been related to trading volume according to **Gervais and Odean (2001)**, **Barber and Odean (2000,2001)** and Statman et al. (2006). It can be also understood as, the investor's propensity to overestimate the accuracy of their own estimation abilities, in the sense that they rely on their own private signals and avoid public signals (**Daniel K, Hirshleifer D and Subrahmanyam A, 1839-1886, 1998**). Overconfidence is one of the most highly researched biases as it makes trading more as they become sure of the specific outcome. So, overconfidence leads to high trading volume in the market. Thus, for this study, to understand the relation between overconfidence bias and investment performance, the hypothesis H1 is proposed as below:

Hypothesis H1: There is positive correlation between overconfidence bias and investment performance of the investor.

2. Herding:

It is the habit of investors to follow the crowd. **Lakonishok et al, 1992 and Scharfstein and Stein, 1990** examine the factor of herd in the investment decision of money managers. Herding is the propensity of a group of money for managers to buy (sell) stocks at the same time, rather than trading independently. It is the most influential bias. When individuals start imitating each other, the impact of the behaviour gets strengthened. **Bikhchandani S and Sharma S, 2001**, differentiate this bias into intentional and spurious. This bias can have an extreme effect on the stock market in the period of bull as well as bear market. It is also prevalent in experts like portfolio managers, financial analysts etc. Herding bias influence the investor's decision making and have impact on investment performance, thus for that hypothesis H2 is proposed as below:

Hypothesis H2: There is positive correlation between herding bias and investment performance of the investor.

3. Mental Accounting:

Barberis & Thaler, 2003, says that it is a concept to demonstrate the fact that investors organise their portfolio into separate accounts to be treated separately. **Thaler, RH, 1999**, describes that mental accounting is a set of cognitive operations used by individuals to formulate, evaluate, and keep record of financial movements. It takes how results are noticed and experienced, how decisions are taken and subsequently evaluated. They record the changes in portfolio performance as the individual's decision structure shifts from stock to portfolio accounting. Their outcomes explain that when this happens, the value of individual stock return falls, the stocks become less volatile and correspond more with each other. Thus, to analyse the relation between mental accounting and investment performance, the hypothesis H3 is proposed as below:

Hypothesis H3: There is positive correlation between mental accounting bias and investment performance of the investor.

4. Loss Aversion:

Kahneman, D and Tversky, A, 1979 introduced loss aversion by referring to the tendency of individuals to avoid losses strongly as compared to obtaining gains. **Lehenkari and Perttunen (2004)** and **Shefrin and Statman (1985)** argued that when price is going down, investors do not want to be losers so they keep the stocks and expect that its trend will reverse. This is because loss brings disappointment and its impact is much greater than that of profit. It shows that in intra-day trading, a loss in the morning leads to higher risk taking in the afternoon. Further, this bias changes depending on market situation, for example, investors become more loss averse in bull markets as compared to bear markets. This indicates that the loss is larger when others are having gains. So, considering investment performance with loss aversion, the hypothesis H4 is proposed as below:

Hypothesis H4: There is positive correlation between loss aversion bias and investment performance of the investor.

5. Relationship between variables like gender, age, job experience and investment experience with respect to behavioural biases:

There is a relationship between these variables and behavioural biases which influence investment decisions and investment performance of the individual investor. If we talk about gender, males are trading more than females so their decisions would be as per their understanding and past return. Most of the studies like **Barber, Odean, 2001, Bhandari and Deaves, 2006**, have confirmed that men are more overconfident than women. Same way in age, job experience and investment experience are also influenced by these biases at some level. So, for this purpose, the hypothesis is as below:

Hypothesis H5: There is no significant difference between the average score of behavioural bias of male and female respondents.

Hypothesis H6: There is no significant difference in the average score of behavioural bias based on job experience.

Hypothesis H7: There is no significant difference in the average score of behavioural bias based on investment experience.

Hypothesis H8: There is no significant difference in the average score of behavioural bias based on age.

6. Investment Performance:

When your expected return on investment meets your actual return, which means your investment has given more return than your expectation. Other than this there are various ways of measuring an investor's investment performance. As per **Anderson, Henker and Owen, 2005**, individual investors who make higher amounts of transactions may result in greater results as compared to individuals with fewer transactions. Also, there may be individuals whose investment profits are not high but they are satisfied with their investment performance; in contrast to this there are some investors whose profits are comparatively high but don't feel satisfied. Therefore, to measure the investment performance, the satisfaction level of investment decisions with investment return are considered in this paper.

RESEARCH METHODOLOGY

To analyse the relationship of behavioural biases and investment decision, researchers found that biases like herding, overconfidence, mental accounting and loss aversion have significant relationship with investment

performance. For this study, data were collected from the people who are having financial savings, ability and knowledge to invest in various financial avenues.

1. Respondents and Sampling Procedure:

The size of respondents was 150 for which convenience sampling method was used (shown in TABLE 1.), in which sections of the population were targeted who are having financial savings, ability and knowledge to invest in various financial avenues.

2. Survey Instrument:

Descriptive research is undertaken to study behavioural biases in the investors with the help of a questionnaire. The questionnaire consists of 40 items that are divided into 2 parts. The first section includes the scenario-based question that reflects their underlying behaviour biases. For that five-point Likert scale is used to range from 1 (Strongly Disagree) to 5 (Strongly Agree). In this the first 6 items pertain to herding, 5 items relate to overconfidence, 4 items pertain to mental accounting, 6 items relate to loss aversion, 6 items pertain to investment objective and 3 items are related to investment performance. The second section consists of demographic profiles like name, age, gender, education, profession, annual income, trading experience and frequency of trading.

Table 1. Sample Profile

		Frequency	Percentage
Gender	Male	109	72.7
	Female	41	27.3
Age	Less than 30 years	43	28.7
	31 to 45 years	80	53.3
	46 years or above	27	18

Education Qualification	Higher Secondary	3	2
	Undergraduate	6	4
	Graduate	81	54
	Post Graduate	60	40
Occupation	Salaried	70	46.7
	Self Employed	52	34.7
	Professional	13	8.7
	Others	15	10
Annual Income	Up to Rs. 2,00,000	11	7.3
	2,00,001 to 3,50,000	35	23.3
	3,50,001 to 5,00,000	71	47.3
	5,00,001 or above	33	22
Job Experience	Up to 3 years	33	22
	3 to 5 years	22	14.7
	More than 5 years	95	63.3
Year of experience in investment in stock market	Less than 3 years	84	56
	3 to 5 years	26	17.3
	More than 5 years	40	26.7

3. Data Analysis

The collected data are processed and analysed by SPSS software. The statistical techniques which are used for the data to achieve the research objectives include ANOVA, independent sample t-test and correlation. The descriptive statistics (mean, variance, standard deviation) are used to describe the influence level of behavioural variables on the investment decision making of investors. So, the results obtained are as follow:

From TABLE 2, the analysis of correlation showed that over confidence has a positive impact on investment performance ($r = 0.224$, Sig. = 0.006, $p < 0.05$). Therefore, H2 is supported by statistical tests of correlation while H1, H3 and H4 are not supported. Loss aversion bias ($r = -0.028$) has a negative impact while herding ($r = 0.012$) has a lower impact on investment performance. The results are similar to Le Phuc Loung and Doan Thi Thu Ha (2011). They found a negative impact of loss aversion and lower impact of herding on investment performance.

Table 2. Correlation Matrix

	Herding Score	Over Confidence Score	Mental Accounting Score	Loss Aversion Score	Investment Performance Score
Herding Score	1				
Over Confidence Score	.166*	1			
Mental Accounting Score	.231**	.119	1		
Loss Aversion Score	.388**	-.081	.372**	1	
Investment Performance Score	.012	.224**	.047	-.028	1

*. Correlation is significant at the 0.05 level (2 tailed).

**. Correlation is significant at the 0.01 level (2 tailed).

TABLE 3. shows the result of the Independent Sample T-test. It shows the difference in mean score of male and female respondents. Here the result does not find any significant difference between male and female respondents. As all significance value is greater than p-value, the null hypothesis is accepted, i.e. H5 is supported by statistical tests.

Table 3. T-Test between Behavioural bias and Gender

Variable	Male Mean (SD)	Female Mean (SD)	T-stat	Sig.
Herding	17.83 (4.22)	18.17 (4.63)	-0.423	0.673
Overconfidence	18.57 (2.62)	18.73 (2.41)	-0.347	0.729
Mental Accounting	11.94 (2.43)	12.02 (2.25)	-0.203	0.840
Loss Aversion	19.17 (3.53)	18.31 (3.10)	1.368	0.174
Investment Performance	10.19 (1.94)	09.85 (1.97)	0.951	0.343

TABLE 4. Provides the result of ANOVA which was conducted to know the significant difference in average score of behavioural bias based on these variables. The result shows that, all bias except loss aversion (Sig. = 0.017, $p < 0.05$) have significant differences based on job experience. Thus, H6 is supported for all biases except for loss aversion bias. While for other variables, the result shows that, there is no significant difference of biases based on investment experience except for herding (Sig. = 0.03, $p < 0.05$). Here H7 is supported except for herding bias. For age, again all biases show no significant difference except for loss aversion (Sig. = 0.002, $p < 0.05$). Thus, here also H8 is supported by statistical tests of ANOVA except for loss aversion bias.

Table 4. ANOVA between Behavioural bias and Job experience, Investment experience and Age

	Herding Score (Mean)	Overconfidence Score (Mean)	Mental Accounting Score (Mean)	Loss Aversion Score (Mean)
Job Experience				
Up to 3 Years	3.04	3.68	2.78	2.91
3 to 5 Years	2.94	3.60	3.01	3.20
More than 5 Years	2.98	3.79	3.06	3.23
F Ratio	0.123	1.237	2.752	4.171
Sig.	0.885	0.293	0.067	0.017
Investment Experience				
Less than 3 years	3.12	3.65	2.99	3.23
3 to 5 years	2.72	3.88	3.00	3.01
More than 5 years	2.90	3.79	2.97	3.10
F Ratio	3.578	2.493	0.035	1.760
Sig.	0.030	0.086	0.966	0.176
Age				
Less than 30 years	3.04	3.78	2.83	2.97

31 to 45 years	2.90	3.70	3.04	3.16
46 years or above	3.15	3.70	3.09	3.44
F Ratio	1.374	0.336	2.111	6.245
Sig.	0.256	0.715	0.125	0.002

CONCLUSION

The research aimed to study which bias influenced most to the investor while making investment decisions. It was found that overconfidence has a positive relation with investment performance of the investors and thus it is more prevalent in the market. Herding bias has a lower impact on investment performance. We also found that there is no significant difference of these biases on male and female respondents. Secondly, the age and job experience of the investors shows significant difference with loss aversion bias, while on the other side investment experience shows significant difference with herding bias. Thus, impact of biases like overconfidence, herding and loss aversion is observed more among investors as compared to mental accounting.

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