4.1 TITLE: The Role Of Bias On Retail Investor’s Decision In Selection Of Mutual Fund -A Behavioral Analysis

4.2 STATEMENT OF THE PROBLEM

The financial system of India today has a plethora of investment opportunities. With the growing economy, the investor’s disposable income in the hands of the investors also increases with more scope for saving. Today the avenues of investment range from shares, debt instruments, real estate, insurance, bank deposits, and mutual funds etc. The retail segment investor in India who comprise nearly 98 percent of the investor account, constitute only 20 percent of the total net assets and the corporate and institutional investors constitute nearly 55 percent. This retail segment is significant as only 8 percent of the household financial saving population invest in mutual funds in India, thereby providing a vast scope for the industry to engage this segment and expand. Studies on investor behavior have focused more on investors in stock markets. The investment behavior of mutual fund investor who is looking both for safety and good returns have not been explored as much as the stock market investor. The mutual fund as an investment avenue is gaining prominence in India and in this context, the study is an attempt to explore the mutual fund investor psychology and the role of bias in the selection of mutual funds. This study focuses on five important bias namely Overconfidence Bias, Self Attributive Bias, Illusion of Control, Loss Aversion and Herding Behaviour.

4.3 RESEARCH GAP
A number of studies have proved the existence of bias among investors. Of the literatures reviewed it was found that most of the studies have been performed on students, followed by studies on investors’ in stock markets. Continuous research in this area has been focused more on the developed countries. Though there are studies focusing on investors in the Asian markets, there are not many studies undertaken on the role of bias in the Indian Scenario. Studies on the role of bias in the Indian scenario is relatively in the nascent stage. No study has been devoted exclusively in bringing out the role of biases and heuristics on the Retail Investor of the Indian Mutual Fund Industry. As the Mutual Fund Industry in India is in its growth stage and at a time when the industry has a whole has realized the need to increase the Retail Investor participation and find ways to promote their inclusion, it was found appropriate to choose this segment of investors for the study. Also in studying the impact of demographic variables, more work has earlier been focused on overconfidence bias. This study explores its impact on other biases also like self attribution, illusion of control, loss aversion and herding behavior. The study tries to answer the following research questions

4.4 RESEARCH QUESTIONS

5. What is the role of the above mentioned bias on investor’s decision making? Are the mutual fund investors influenced by the above selected five biases?
6. Do demographic factors have an influence on the investor bias? If so, how significant is their influence?
7. Is there a relationship between the investor biases taken up for the study? If so how significant is their relationship?
8. Does one bias lead to the other?

4.5 OBJECTIVES OF THE STUDY
• To study the level of bias and their significance among mutual fund investors
• To study the role of overconfidence, self attribution bias, illusion of control, loss aversion and herding amongst mutual fund investors
• To find out the impact of demographic variables on investment behavior and find its significance.
• To study the relationship among selected bias and understand if one bias influences the other.

4.6 HYPOTHESIS

H1: There is significant difference in investor bias based on gender.

H2: There is significant difference in investor bias based on Age

H3: There is significant difference in investor bias based on Marital Status

H4: There is significant difference in investor bias based on Level of Education

H5: There is significant difference in investor bias based on the Income.

H6: There is significant difference in investor bias based on Type of Investor

H7: There is significant difference in investor bias based on Investor’s Experience in investing

H8: There is significant difference in investor bias based on Investment Horizon.

H9: Self Attributive Investors are also Overconfident

H10: There is a significant association between Illusion of control and Self Attribution Bias
H11: There is a significant association between Herding Mentality and Illusion of Control

4.7 METHODOLOGY: The study uses a survey method of research and the approach is deductive logic reasoning. The primary data for the study was collected from different mutual fund investors across different professions. A questionnaire to tap the five dimensions of bias among investors was used and data was collected from mutual fund investors who visited CAMS (Computer Age Management Service Ltd.) in Bangalore city. CAMS is the registrar and transfer agent for all mutual funds companies. 400 questionnaires were circulated in total and received 309 filled in questionnaires in the useable form. So the sample size for the study is 309.

4.7.1 Questionaire: To capture the required data a questionnaire was designed with data related to the demographic variables of the respondents. This was followed by questions related to the five biases taken up for the study. The scales used in the earlier studies were used for measuring the biases. The scales are explained in detail as below in the Operational Definition. The annexure has the questionnaire with complete choices.

Operational Definition

Overconfidence: Overconfidence is an unwarranted faith in one’s intuitive reasoning, judgments and cognitive abilities. Overconfidence manifests itself in miscalibration, better than average effect and illusion of control and unrealistic optimism. Overconfidence in this study is measured by ‘better than average effect’
or form of overconfidence (Glaser and Weber, 2003). So the degree of better than average effect is measured using a likert scale with five questions tapping this dimension. A five point scale ranging from ‘below average’ at a rating of 1 to ‘Well above average’ at a rating of 5 was used. The respondents were asked to indicate their response which best describes their feeling against each of the items.

The questions were (1) Relative to other drivers, how good are you on road? (2) How good are you on your job? (3) How do you rate your personal level of investment? (4) Relative to other investors, how good are you? (5) How do you rate your ability to have predicted the 2008 recession (financial crisis)?

**Self Attribution Bias:** It is a cognitive phenomenon by which people tend to attribute success to innate aspects like talent and foresight and attribute failures to situational factors. To capture the dimension of Self Attribution Bias, the respondents were asked four questions with three choices against each. They were asked to choose the option that best described their feeling. (1) After making an investment, assume that you overhear a news report that has negative implications regarding the potential outcome of the investment you have just executed. How likely are you to then seek information that could confirm that you have made a bad decision? 2) When returns to your portfolio increases, to what do you believe the change in performance is mainly due to? The third question was 3) After you made a successful trade, how likely are you to put your profits to work in a quick, subsequent trade, rather than letting the money idle until you are sure you have located another good investment?.

**Illusion of Control Bias:** It is a tendency in human beings which leads to believing that they can control or at least influence outcomes. When in fact they cannot. To measure the degree of Illusion of Control Bias among investors, a five point likert scale ranging from ‘Strongly Agree’ to ‘Strongly Disagree’ (rating from 1 to 5) was used. Four questions were asked and the respondents were asked
to rate depending on how much they agree with the statements. Q1. I believe that I have a good amount of control in picking the investments that outperform the market. 2. When returns on my investment increases, it is because of the control I have exercised over the outcome on my investment. 3. I am more likely to win, if I choose the numbers while purchasing the lottery ticket than using a computer generated number and 4. I feel more in control when I roll the dice, while participating in games of chance that involve the dice.

**Loss Aversion:** It is the disutility of giving up is greater than the utility associated with acquiring it i.e. the pain people feel from a loss is about as twice as strong as the pleasure felt from an equivalent experience of gain. To test loss Aversion, the measures suggested by Michel Pompian in his book ‘Behavioural Finance and Wealth Management’ was used. This measure differentiates a rational response as in expected utility theory from a biased (loss averse) response. To measure the degree of loss aversion, four scenarios were given and the respondents were asked to respond by choosing alternatives in each of them. In Question 1, the respondents were asked that if they make a plan to invest Rs.70,000 and are presented with two alternatives. Which scenario would they rather choose? The options given were, a. Know that I’ll only be repaid Rs.60,000 for sure and b. Take a 50-50 gamble, knowing that I’ll get back either Rs.75,000 or Rs.50,000. In Question 2, they were asked to choose one of the following options a. A 100 percent chance of winning Rs.1,00,000 and b. An 80 percent chance of winning Rs.1,40,000 and a 20 percent chance of winning nothing. Question 3 was that if they planned to invest Rs. 50,000 and are presented with two alternatives, which scenario would they rather choose? The options were a. Be assured that I’ll get back my Rs.50,000, at the very least, even if I don’t make any more money and b. Have a 50 percent chance of getting Rs. 70,000 and a 50 percent chance of getting Rs. 35,000. In Question 4, they were asked to choose one of the two outcomes. a.
An assured gain of Rs.5000 and b. A 25 percent chance of gaining Rs. 25,000 and 75 percent chance of gaining nothing

**Herding** : Herding is a behavior following the decision of the majority, without thinking rationally. It is an imitation behavior. Motives for herding are three 1) information based herding 2) reputation based herding and 3) compensation based herding. This study tries to measure herding in terms of information processing. A five point rating scale from ‘Strongly Agree’ rated at 1 to ‘Strongly Disagree’ rated at 5 was used, to understand how the publicly and privately available relevant information is being processed before investment. Three questions were asked and investors were required to rate their opinion. 1) My colleagues and friend’s are an important source of information, 2) when I make an investment, I generally follow the trend and 3) I consider most of the published economic and political information when I invest.

**Novice and Experience Investor**: The investors with less than two years of investment experience were considered as less experienced (novice) investors and above two years were considered experienced. Any investment decision process requires that the investors understand that both firm specific factors and market variables are relevant. As studies do not clearly demarcate a novice from an experienced investor in terms of the number of years of investment experience, we assume that initial years can be considered a novice period where the investor has a vague idea on the various factors to be considered before an investment decision. So for the purpose of this study we assume that investors with less than 2 years of investment experience as a novice investor and more than 2 years of investment experience as an experienced investor.

**Direct Investor and Financial Consultant**: A direct investor is one who makes his own investment decisions. A financial consultant is one who makes investment decisions on behalf of others.
Retail Mutual Fund Investor: Retail individual investor' means an investor who applies or bids for securities of or for a value of not more than Rs.1, 00,000.

4.7.2 SAMPLE DESIGN

Sampling Method: Population samples are random when no bias determines their individual selection (Bill Godden). The sample chosen for the study was by Random Sampling method. The mutual fund investors who visited CAMS were randomly chosen to collect the data.

Population: All Retail Mutual Fund Investors who have invested in AMCs in Bangalore City

Necessary Sample Size = \((Z\text{-score})^2 \times \text{StdDev} \times (1-\text{StdDev}) / (\text{margin of error})^2\)

1. Margin of Error (Confidence Interval) — The confidence interval determines how much higher or lower than the population mean you are willing to let your sample mean fall. The sample size for the study is 309. The number of filled questionnaires received where the data was complete and in useable form was 309 (out of 400 circulated), and so the confidence interval for this sample is 5.5 percent.

2. Confidence Level — the confidence level chosen for the study is 95% and so the Z score is 1.96.

3. Standard of Deviation — The standard deviation used for this calculation is 0.5, as this is an acceptable number which can ensure that the sample will be large enough in cases where standard deviation is not known.

Therefore, the sample size = \(((1.96)^2 \times 0.5(1-0.5)) / (0.0556)^2 = 309\)

Unit of Analysis: Individual Retail Mutual Fund Investors who have invested in AMCs in Bangalore City
4.7.3 **Statistical Techniques**: The collected data has been analysed using both descriptive and inferential statistics. In descriptive analysis the data was summarized using percentages, mean and standard deviation and presented in the form of tables and charts. To find the significant difference between the demographic variables (Independent Variables) and all the five biases (Dependent Variables), the ANOVA test was used. To find the degree of association between the biases taken for the study, ie. Overconfidence Bias, Self Attribution Bias, Illusion of Control, Loss Aversion and Herding Bias, a Correlation Analysis was done. To study the influence of bias and find out if one bias leads to the other, a regression analysis is done. The regression equation for the same is estimated to predict the value of the dependent variable based on the independent variable.

4.8 **LIMITATION OF THE STUDY**

- The study is not comprehensive enough to examine all sources of bias influencing the mutual fund investors as it focuses only on five biases.
- In studying the impact of one bias on the other, there could be the influence of other bias (other than that which is taken up for this study) whose impact can change the relationship of the biases that are studied. Therefore drawing conclusions without the context would be erroneous.
- The study uses ‘questionnaire method’ to capture the influence of biases on the respondents. Questions are asked based on certain assumptions and opinions elicited. Any questionnaire method has its limitation like the social desirability bias and this study also is no exception to this.

4.9 **CHAPTER SCHEME**

**Chapter 1**: This chapter contains the introduction to the study. It gives a detailed explanation of the five biases taken up for the study, with the implication to the
investor. It also includes the evolution of behavioural finance, with a brief of significant contributors to the field.

**Chapter 2**: The second chapter includes a complete review of literature related to the study. Review related to the general concept of bias and review specific to the five biases taken for the study are included.

**Chapter 3**: This chapter includes a detailed explanation of the mutual fund industry. The concept of mutual fund, with its types, composition, regulatory framework, major players, challenges and future prospects of the industry are included.

**Chapter 4**: The research design with the research questions, objectives, hypothesis to be tested, methodology etc. are included in this chapter.

**Chapter 5**: The data analysis and interpretations are presented in this chapter. This includes both descriptive and inferential analysis.

**Chapter 6**: The finding and results of the analysis are documented in this chapter. This is followed by the discussion to the results and conclusion of the study. The recommendation for further research and contribution to the study are included in the end.