CHAPTER -6

CONCLUSIONS AND SUGGESTIONS

6.1 Introduction

This thesis attempted to analyse the effects of heuristics and behavioural biases on investment behaviour. This research study focused on the investment behaviour in mutual funds in Gujarat, to understand the application of behavioural finance.

This chapter presents major findings of the study and conclusions in terms of investment behaviour in mutual funds with specific reference to behavioural finance. It tracks investors’ awareness, perception and preferences of mutual funds’ investments. It provides clues to investors’ thinking pattern, attitude for investment decisions etc. It helps in understanding or identifying factors that affect investors’ decision making i.e. selection of mutual fund investments. It brings to some behavioural biases, frame dependence, disposition effect, representativeness bias, overconfidence bias and mental accounting biases, which influence the investment behaviour of mutual fund investors.

Section I: Primary Data results

6.2 Results and Findings

On the basis of the analysis of the primary data with appropriate tools, findings, inferences and observations were made which are as under:

6.2.1 Investment preferences of mutual fund investors

- Total 1,182 respondents were analysed to understand their investment decisions in mutual funds. 85% of respondents were male, major respondents were from age group of 26-35 years and below 25 years of age. Major investor’s income is Rs.15,000 to Rs. 50,000 per month, most of them are graduates and post graduated. Major respondents are self-employed and working in private sectors. These respondents were representing major cities of Gujarat.

- The investment horizon (time period) of the respondents indicates that majority (44.3%) of respondents had an investment horizon covering a period of 1-3 years, and (25.8%) preferred 3-5 years of investment period. It was found that, majority (77%) or respondents preferred to allocate 5% to 25% their savings. Whereas, 15% of respondents preferred to allocate less than 5%, and 8% of investors preferred to allocate more than 25% of savings to mutual funds investments.
• It has been observed from the responses that the schemes ‘Equity Growth Schemes’ have obtained a highest total of 7,504 points, while the scheme ‘Index Funds’ had obtained a lowest total of 4,387 points. It was found that ‘Equity Growth Schemes’ was highly preferred, followed by ‘Tax Saving Schemes’ and ‘Balanced funds’ respectively. ‘Blue-Chip & Large cap funds’, ‘ELSS’ and ‘Liquid Funds’ was in average preference of respondents. Whereas, ‘Sector funds’ and ‘MNC/Gold funds’ and ‘Index Funds’ were least preferred among respondents.

6.2.2 Findings about Awareness of investors about mutual fund investments

• It was evident from the information revealed by investors that, majority (52.7%) believed that mutual fund provides moderate return. It can be concluded that, majority of respondents (74.9%) believed that principal invested in mutual funds is unsafe. Thus, it can be concluded that, they believed that return is moderate and risk involved in mutual fund investments in terms of capital depletion.

• It was found that, majority (75.1%) investors believed that mutual fund investment is moderately liquid. Through analysis, it can be concluded that most preferred and known source of application is agents (66.58%) and banks (56%) as compared to AMC and Internet.

• It was found that, more than 70% of respondents believed KYC and PAN number required for mutual investment, whereas 51.2% said bank account number is essential for this type of investment.

• It can be concluded that, as only 60.1% had knowledge that direct investment in to mutual funds is not subject to entry load. It was revealed from study that, 56% read offer documents and Key memorandum before investment in mutual funds.

• So, from the data analysis about awareness of different facet of mutual fund investments, it may be inferred that overall awareness about mutual fund investments is at moderate level among investors in Gujarat. It was found that demographic factors viz. Gender, income, and occupation does not evident association with overall awareness of mutual fund investments.

6.2.3 Perception of mutual fund investors:

It was found that investors can be classified in three categories through multiple discriminant analysis. The classification results based on analysis
sample indicate that $95 + 115 + 266 = 476$ out of $1182 = 40.3\%$ of original grouped cases are correctly classified. This indicates a satisfactory validity. It was found that investors with experience of more than 3 years emphasis on regulatory benefits in MFs, whereas, investors with $<1$ year experience focused on comparative benefits of MFs to others.

6.2.4 Investment Decision Making:

6.2.4.1 Criteria used to judge the performance of mutual funds

- Analysis of criteria used to judge the performance according to respondents, it was found that, around 50% respondents considered ‘past five years return, 40% of respondents considered ‘three years return, past returns from inception, ranking, alpha of mutual funds and expense ratio’ as predictor of performance of mutual funds.

- From analysis of factors that affect the decision making, It was also observed from Chi-Square test results that demographic factors, viz. age, education, and occupation are significantly associated with ‘criteria uses to judge the performance’ of mutual funds. As P-values in all cases are less than significant level ($p-values < 0.05$ & $0.01$), led to rejection of null hypothesis. However, gender and income is not associated significantly. It was observed that, as compared to lower educated respondents, higher educated and higher in age respondents gave more significance to given criterion to judge mutual funds’ performance.

6.2.4.2 Criteria used in selection of mutual fund schemes for investments

- It was observed that, 40.1% considered ‘analyst report’, 45% considered ‘mutual fund performance’, 54% considered ‘dividend or interest payment’, 47.6% ‘reputation of fund manager’, 44.9% considered ‘SEBI regulation’, 53.3% considered ‘growth perspective’, as significant criteria while selecting mutual fund schemes. Thus, it can be concluded that dividend and growth perspective are most significant criteria while selecting mutual fund schemes

- It was found from data analysis that, selection of mutual fund depends on respondent’s age, income, education and occupation but not on gender. It was observed through Chi-square test results, that null hypothesis is rejected in case of all demographic factors except gender ($P-value < 0.05$ and $P-values < 0.01$), indicates there exists significant association of demographic variable and selection criteria while purchasing mutual funds.
6.3 Behavioural Bias and its effect on investment behaviour (Factor Analysis)

- The analysis was done on 19 statements representing heuristics and behavioural biases. Six factors had been identified through the factor analysis with Eigen values greater than 1.00 accounted for 51% of total variance explained, which can be considered of moderate level.

In order to find out the appropriateness of use of factor analysis the approximate result of Chi-Square value was of significant as the p-value of Bartlett’s test was less than 0.001. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.773, which was also enough to support the application of factor analysis techniques. Through Varimax method of factor rotation, six factors so extracted viz. Familiarity and Domestic bias, Representativeness - Blue chip fallacy bias and SAB, Optimism Bias, Mental Accounting bias, Representativeness bias and Overconfidence and Aversion to ambiguity bias

These results support the hypothesis that investment behaviour may be influencing by heuristics and behavioural biases. Discriminant analysis had been performed on these six factors. The Discriminant analysis was performed using investment period (short term, medium term and long term investors) as discriminant function D and the following canonical discriminant function equation was obtained.

It was found through discriminant analysis that the classification results based on analysis sample indicate that 59 + 199 + 238 = 496 out of 1,182 = 42% of original grouped cases are correctly classified. This indicates a satisfactory validity. It may, therefore, be assumed that the interpretations made on the basis of Multiple Discriminant Analysis (three groups) for types of investors are valid. Two discriminant equations found for behavioural biases through discriminant analysis are as follows:

\[
Y_1 (Experience) = -1.727 - 0.405 \times \text{factor1} - 0.529 \times \text{factor2} + 0.795 \times \text{factor3} + 0.675 \times \text{factor4}
\]

\[
Y_2 (Experience) = -4.165 + 0.628 \times \text{factor1} + 0.275 \times \text{factor2} - 0.095 \times \text{factor3} + 0.561 \times \text{factor4}
\]

In above function, Factor 1 is Familiarity and Domestic bias, Factor 2 is Representativeness - Blue chip fallacy bias and SAB, factor 3 is Optimism Bias and factor 4 is Mental Accounting bias

Thus, it can be inferred that for identifying whether the respondent having high, medium or low experience, the function value has to be checked. If the function
value \((Y_1)\) is near to 0.24 then the respondent will be classified as having high experience (>3 Years). Respondent will be classified as having medium and low experienced if function value \((Y_1)\) is near to -0.193 and -0.08 respectively. 

If the function value \((Y_2)\) is near to 0.016 then the respondent will be classified as having high experience (>3 Years). Respondent will be classified as having medium and low experienced if function value \((Y_1)\) is near to 0.041 and -0.165 respectively. So, with the help of these discriminant functions one can classify the respondent based on experience in MF investment.

### 6.4 Behavioural biases and its impact on investment behaviour

#### 6.4.1 Analysis of Frame dependence in investment behaviour

- An analysis indicated the difference of choice of investors in case of ‘choice under uncertainty’. It is evident that when choice was framed in terms of return, majority 60% had chosen sure return option: ‘option a.’, while, their choice differed when choice was framed in terms of loss. Majority 58% had chosen ‘option b with betting (chance factor)’. This kind of conflicting behaviour supports the frame dependence among the investors, when there is ‘choice under uncertainty’.

Results of choices indicates that about 56% in total were changing their choice when, they were given option in different frame. Results from the Chi-Square test evidenced that null hypothesis could be rejected as p-value was less than 0.005 (\(P\)-value=0.003<0.05). Thus, the result supports the prospect theory and framing effect of investors’ decision making, that investor’s choice is frame dependence.

#### 6.4.2 Analysis of disposition effect

- The analysis of disposition effect reflected decision of investors under uncertainty, where respondents were given choice of basic two options that they would prefer to sell their holding in period uncertainty. 55% had chosen option a: ‘sell of the schemes which yielded a profit’ and 45% had chosen to sell ‘loss making schemes’ in uncertainty. This result indicates the disposition effect in their decision. Thus, it can be concluded that investors are reluctant to realize the loss, otherwise as a rational investor they should sell a ‘loss making schemes’, to cut the losses & let the profit run. 

Analysis of Chi-Square test of association between disposition effect (selling) and demographic factors, it was found that there exists significant association
between disposition effect and demographic factors viz. age, income and education, except gender.

- Another test of disposition effect reflected sell decision of mutual fund investors out of two schemes of adverse results, when they were provided two holding in their portfolio of ‘Scheme-A at 25% profit’ and ‘Scheme-B at 15% loss’. From analysis it can be inferred that majority (64%) of respondents had chosen ‘option a: Sell of A scheme, which was at profit’, and 36% of investors choose ‘sell of B scheme, which was at loss’, at time of decision. This result supported the argument of disposition effect that investor pursue sell of profit making scheme rather than loss making scheme, demonstrate preference for selling winners and holding losers.

- In other test of regret aversion, respondents were asked to provide feedback about their investment results. It was observed that 70% said that they had good past performance of mutual fund investments, while 30% said that they incurred loss in their investments. It was found through the ANOVA test that, respondents with good past experience, mean that dividend paying mutual funds are better than growth funds. Views of respondent with bad past experience differs significantly than others (p-value<0.05).

- It was evident from Chi-square test (p-value>0.05), could not reject the null hypothesis, it can be concluded that there is no association between time horizon (time period) of investment and investments returns.

6.4.3 Mental Accounting bias in investment behaviour

- Results were found about the investors’ choice of schemes from broadly two categories of risky and less risky schemes of MFs. It could be inferred that 44% had chosen ‘equity schemes’, risky category for investing salary savings, however, major 66% of respondents had chosen ‘debt/income schemes’ less risky category of mutual fund investments. Thus, it may be concluded that investors choose less risky investments for salary savings. Here, a tendency of investors to split up their investment into safe account and risky accounts is observed. It has been observed that respondents were choosing different nature of schemes for two sources of income, where money is one. They were classifying into two class, viz. salary income and bonus.

- Chi-square test results indicated the differences in choice of schemes from two broad classes of schemes i.e risky and less risky Schemes. Around 48% of investors’ investment choices were differing from each other for two source of
income. Null hypothesis could rejected (p-value<0.05). Mental accounting bias has observed from varied choices of respondents in financial decision making. As a rational investor, one should focus on overall level of wealth and effect on total wealth, rather than source of wealth. Thus it can be concluded that investment behaviour is not independent of mental accounting bias.

6.5 Heuristics and other biases:

6.5.1 Overconfidence Bias

6.5.1.1 Performance evaluation interval in investment behaviour:

- As overconfidence bias states that overconfident investor prefer to evaluate their portfolio performance for short period of time. Thus, it can be inferred that, result is consistent with the arguments of overconfidence bias, in choice of interval for performance evaluation. It indicates that 66% of investors depicted overconfidence bias in their behaviour.

Results of the Chi-square analysis for association between demographic factor and overconfidence bias, represents in ‘choice of interval of performance evaluation’. Null hypothesis could be rejected for factor education as p-value 0.002<0.05, means there existed a statistically significant association between demographic factors – i.e. education and overconfidence bias, but there is no association between genders, age and income with overconfidence bias of respondents.

6.5.1.2 Forecasting ability of investors:

- It could be inferred that 33% of respondents are not able to judge their forecasting ability. 31% of respondent believed that they had good forecasting ability about market. While, 33% said that they could not forecast the market movement. So, it can be concluded that 31% of respondent had shown overconfidence bias in their forecasting ability or judgment ability.

It can be observed from Chi-square test that, there is no significant association of demographic factors with overconfidence bias in forecasting the market trends, except one variable i.e. age group as the P-value 0.001<0.05. It means null hypothesis could be rejected; indicated strong association of age factor with forecasting of market trend- overconfidence bias.
6.5.1.3 Overconfidence in judging general ability

- It was found that, judgment about skills depicted the overconfidence bias among investors. 72% of respondents had rated themselves as good driver, while actual research data on driving ability shows that almost 80% of divers are under average driver. This kind of judgment about their own skills supports the theory of overconfidence bias in their own ability. It can be inferred from hypothesis test significant association of demographic variable and overconfidence bias, indicated that there exist significant association between age and incomes with overconfidence bias.

6.5.2 Self-attribution bias (SAB), Regret aversion and Shifting of responsibility

- It was found that people try to avoid the pain of regret by shifting the responsibility to other reference point, as respondents under study, 87% supports the self-attribution bias, that poor result is due to others reasons. Thus, it can be concluded that, their behaviour supports SAB, by shifting responsibility, or not able to accept that they had done wrong, which can create cognitive dissonance in their own mind.

6.5.2.1 Overconfidence and Self-attribution bias (SAB)

- It was observed that, 40.5% of respondents had said that their good performance was due to their own decisions or own good luck, while 60% had attributed good results to other reasons. However, it can be inferred that when respondent asked to give reasons for loss and profit (good performance & Bad performance) they attitude changed. Result suggests that in case of loss it was only 13% said it was own mistake, while in case of profit/good that ratio increased to 30% to 40%, who said it was their capability or luck. This results support the self-attribution bias of investor’s behaviour.

The P value (0.001<0.05 &0.045<0.05) for age and income factor, the null hypothesis could be rejected for all demographic factors except gender and education. Thus, it was confirmed that, there exists statistically significant association between demographic factors – i.e. age group and income and ‘self-attribution bias’.

6.5.3 Herding behaviour of investors

- It was observed that, respondents had shown preference towards purchasing stock on friend’s recommendation. 37% of investors wanted to research first and then decision of buying, while 63% of respondents validate buying
directly or indirectly. So, it can be concluded that this observation supports the herding bias in investment behaviour, as they wanted to be part of group decision.

6.5.4 Other biases:

6.5.4.1 Cognitive Dissonance

- The study found an evidence of cognitive dissonance bias in decision making process of investors in their reaction to market news. Around 60.3% of respondents support to stick with their earlier decision and will not react to market bad news, while 25% said they will sell it due to market new. This result indicates that respondents have either under-reaction to market news or they were not ready to accept that they had made wrong choice/decision, because this may create mental disturbance.

6.5.4.2 Shadow of past or house money effect

- It was found that respondents, around 50% had shown slow response or negative attitude towards acceptance of new fund offer, where they had bad experience. This supported the shadow of past effect bias in their behaviour.

6.5.5 Psychology of risk in investment behaviour

- It was observed that, 26.23% of respondents considered risk is equivalent to loss, 40.19% considered risk as uncertainty of return, 26.57% considered it as opportunity, and 7% considered it as thrill.

The results indicated relationship between risk attitude and demographic factors viz. education, income of respondents, (P-value 0.018<0.05, 0.002<0.05) led to rejection of null hypothesis. Thus, it can be inferred that, there may be significant association between ‘attitude of risk’ with income and occupation. Whereas, (p-value0.381>0.05), null hypothesis could not be rejected for association between ‘attitude of risk’ and education.

6.5.5.1 Allocation of funds to mutual fund investments:

- From result it could be inferred that major respondents preferred to allocate their funds up to 5% to 25% to mutual fund investments. Those who considered risk as uncertainty of return or opportunity invested higher proportion of their savings to mutual funds as compared to those who considered risk as loss or thrill. It can be concluded that major respondents are moderate risk taker or risk averse investors.
• The results indicated clear relationship of risk attitude and allocation of savings to MF investment. As P-value is 0.002< 0.05, Null hypothesis could be rejected. Thus, it can be concluded that, there may be significant association between risk attitude and allocation of savings to mutual funds’ investments.

6.5.5.2 Allocation of funds in equity and debt category of funds:

• It was found that majority 66% of investors preferred to allocate 25%-50% to equity category of mutual fund schemes. It was also observed, that respondents who allocate highest amount to equity categories; they considered risk as uncertainty of return or opportunity. While those who invested 50% to equity schemes, they considered risk as uncertainty of return or loss. The results from Chi-square test of risk attitude and its association to ‘Equity:Debt’ allocation of investment, (P-value 0.004< 0.05), indicated rejection of null hypothesis. Thus, it can be concluded that, there may be significant association between risk

6.5.5.3 Prediction/ forecasting ability of respondents

• It was found that, 71% of respondents had opinion that there are 25%-50% of chances that there will be double digit inflation in next year.

6.6 Representativeness and other heuristics

• It was found that, highest mean score (4.17) was given to the statement “Judge your investment skills as compared to others”. This result indicated that respondents have having higher level of overconfidence & self-attribution bias about their investment judgment skills.

• It was observed that, the statement “If MF scheme has changed its name and style/objective from Value to Growth” got mean score 4.02. It depicted that respondents’ processing of information about the schemes news, supported presence of representativeness bias in investment behaviour of investors. It was also found that,(mean score of 4.01) strong evidence of representativeness bias- extrapolation bias in attitude of respondents.

• It was found that, lowest mean score (3.04) has assigned to statement 30.9 results about ‘Closed ended funds future performance’. Thus it can be concluded that respondents still believed that closed ended MF schemes cannot perform well in India, that supported the shadow of past bias or bias known as snake bite effect.
• This result provided support to framing bias as well as under-reaction phase of overconfidence which is opposite of optimism bias, where investors judgment depends on question frame, whether positive or negative. So, we can conclude that, respondents are depicting behavioural biases, viz. Repetitiveness, overconfidence, framing and self-attribute bias in investment behaviour.

6.6.1 It was observed through ANOVA test that

• It could be inferred that representativeness biases (opinion about performance of mutual funds for next period) and overconfidence biases do not differing significantly in male and female respondents.

• As the P-value less than 0.05 in case of statement number 30.2 null hypotheses could be rejected. This means there is significant variation across the age group in “representativeness and law of small number bias”.

• It was found that over confidence bias in the opinion of respondents across age groups did not varies across all variables. As p-value < 0.05 indicated that, null hypothesis could not be rejected for framing, SAB (self-attribute bias), and CD (cognitive dissonance) bias as well as in Shadow of past bias across all age group.

• The mean scores of respondents with different income groups differed statistically (p-value <0.05).Null hypothesis could be rejected for representativeness- law of small number and extrapolation of past bias across all income groups of respondents.

• It was also observed that, the opinion of respondents across income groups do not vary in all statements (P value>0.05). It can be inferred that in case of framing and SAB, respondents had alike opinion about the performance for the next period.

• The mean scores of respondents with different education groups differ significantly (p-value <0.05). Investment behaviour across all education groups varies significantly in biases representativeness- extrapolation of past bias.

6.6.2 Result of Correlation Test:

• From correlation analysis it was observed that there exists correlation between awareness and perception of mutual fund investors. It depicts that the correlation coefficient found 0.174. The coefficient value indicated a weak positive relation between awareness and perception. However, it was found
that there exists partial positive relationship between perceptions and overall behavioral biases; Pearson’s correlation coefficient \((r)\) was \(0.585\) with \(p\)-value less than \(0.001\). It depicted that there is correlation between perception and behavioural biases of mutual fund investors.

Section II: Secondary Data results

6.7 Results and Findings

On the basis of the secondary data analysis of with appropriate tools, some broad findings, inferences and observations were made which are as under:

6.7.1 Results and findings of all mutual fund schemes

- It was found that, total 816 schemes were under operation and considered for evaluations, among them 129 (16%) were debt oriented 687 (84%) were equity oriented schemes. Overall, equity schemes performance was poor as compared to debt oriented funds as on March 2013.

- Analysis 340 equity diversified schemes revealed that, 175 (51%) had performed well, 165 (49%) had performed poor in year 2013. It is worth to mention here that only mid cap fund had performed well. It was also found that among all equity category, 60% of schemes had performed poorly in year 2013. However mid cap results was quite remarkable, as 98% of the midcap schemes had performed well.

- It was found that, NSE based index funds (55%) of schemes had performed below bench mark performance, while all BSE based funds had performed better than bench marks performance. It was found that infrastructure fund had performed very badly. It was observed that 80% of technology funds had performed well during this year. Overall 61 Schemes other than included in above, 48% of schemes had performed either below average or poorly.

- We found that performance of equity oriented schemes for last five years returns is fluctuating at very high rate. Total number of schemes with negative return in year 2013 are 69 (17%) of total schemes. In 3 years of investment period 85 (21%) of total schemes had delivered negative return. While in five year period of investment 37 (12%) of the schemes had delivered negative return, means capital depletion. It is evident from this results that mutual fund industry is not performing well.
• It was observed that, performance of various debt oriented MF schemes for the year ended on March 2013 was remarkable as compare to equity category. It was found that, out of total 348 schemes, 262(75%) schemes had performed well, while 86 (25%) schemes performed poorly in year 2013. It was observed that among all debt category funds income funds, liquid funds, dynamic funds and other short terms funds has performed excellently. Balance fund and Gold funds depicted very poor performance.

• It was found that, out of total 347 schemes in year 2013, there were no schemes with negative returns. In three year period of investment, only 1 scheme and in five period 2 schemes had delivered negative return out of 143 schemes. Thus it can be inferred from this results that overall debt oriented schemes had performed well.

6.7.2 Results and findings of mutual fund industry

• It was found that, over the 10-year period since 1999 to 2009 encompassing varied economic cycles, the mutual fund industry has grew at 22 percent CAGR .By the end of year 2012-13, the mutual fund industry has become primarily debt-oriented with debt funds (including liquid funds) forming 64% of the AUM.

• It was observed that mutual funds constituted only 3.3 percent of households’ financial savings in financial year 2010, which further contracted to -1.2 percent and -1.1 percent in financial year 2011 and financial year 2012. It is evident that, there is unequal distribution of investment of mutual funds, as top five cities contribute to 74% of the investment in March 2013, as compared to 71% in March 2012.

• It was found that due to volatile market conditions in the last two years, which have led to net withdrawals by investors to the tune of Rs. 49,406 crore in FY 2010-11 and Rs. 22,023 crore in FY 2011-12, leading to a further drop in AUM in addition to the drop caused by adverse market movements.

• The number of scheme has grown from 779 to 4,473 in the last five year period. In year 2013, 139 new schemes were launched which generated sales of Rs. 23,647 crores. Further, there have been 18 new entrants through joint venture or acquisitions at the end of March, 2013. The total active schemes registered were 44 out of 59 players in total.
It was observed that Indian mutual fund industry is growing at a good pace. At the end of March 2013, average AUM reported a growth of 23%, this was considerably higher than the 12% growth reported for year ended on March 2012. The Indian mutual fund industry has grown at a compound annual growth rate of 18% in the period 2009-2013. However, AUM under the equity segment has actually declined by 5%, whereas the debt segment has grown at 36%.

It was evident from the study that sector wise AUM indicates that Indian mutual fund industry was overruled by private sector players, with commanding more than 85% holding on overall market. Net assets of the private sector mutual funds has grown over the period 1998-1999 to 2012-2013 from Rs.20.67 billion to Rs.706.75 billion, reporting tremendous growth of Mutual fund industry.

6.8 Conclusion:

Are investors rational in their investment behaviour? Or are they likely to be driven by heuristics and biases, as well as affects and psychological biases? The objectives of this thesis was to check if the investment behaviour of investors is rational or biased in mutual fund investments. The focus was on heuristics and behavioural biases, namely: Frame dependence (prospect theory), Disposition Effect, Regret Aversion, Mental Accounting, Representativeness heuristics, Anchoring, aversion to Ambiguity, Overconfidence Bias, Familiarity (Domestic) bias, Self-Attribution bias, Cognitive dissonance, herding behavioural bias, Psychology of risk, and Shadow of past or Affect bias. Effect of this heuristics and biases on investment behaviour of investors in Gujarat were analysed in this study.

This thesis offered an analysis of investment behaviour of investors and test biases in their behaviour. The study found that, investment behaviour of mutual fund investors is affected by heuristics and biases. Results from the study are more indicative in nature than confirmative. Summary of results is given under:
Table 6.1: Summary of Behavioural Bias Results

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<th>Sr. No.</th>
<th>NAME OF BIAS</th>
<th>INVESTORS BAISES?</th>
<th>Sr. No.</th>
<th>NAME OF BIAS</th>
<th>INVESTORS BAISES?</th>
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<td>Law of Small Number</td>
<td>Yes</td>
<td>Shadow of past</td>
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<td>Growth v/s. Value</td>
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It was found through hypothesis testing that investment preference, awareness and decision making are statistically influenced by investor’s demographic factors. However, perception is not statistically influenced by demographic factors. Additionally, it validated the presence of behavioural biases, and heuristics in investment behaviour, through hypothesis testing. It was observed that there exists significant association of demographic factors and behavioural biases and heuristics, except gender effect.

Results from Discriminant analysis suggested that, even though investors were equally prone to committing erroneous decisions owing to being biased, the degree to which each of the biases were affecting them were different in a significant manner to an extent that experienced and inexperienced investors could be separated as two different groups exhibiting a different behavioural pattern.

The study found that, investors suffered from all biases in a significant manner. It is evident from the analysis that investment behaviour is the results of various cognitive errors and heuristics. The statistical analysis had shown that all the investors were affected by the various biases while making investment decisions. Results indicated
that investors found problem in processing information and objective interpretation of
that.

Finally, it can be stated that the study found evidence of frame dependence,
disposition effect, loss aversion, and mental accounting bias in investment behaviour
of respondents. It also provides evidence supporting the presence of
representativeness, familiarity, overconfidence, SAB, extrapolation of past, herding
and other biases in investors behaviour. It is evident from the data analysis that
investors are loss averse, overconfident, frame dependence and representativeness
bias affected. This suggests that their behaviour is heuristic driven and affected by
behavioural biases. It can be concluded from analysis and findings that, investment
behaviour of mutual fund investors is not fully rational, but they depart from the
assumption of rationality.

Using an empirical study on individual investors’ preferences and their behaviour, in
this thesis, explanation is provided about heuristics and behavioural biases. This thesis
has proved that investors’ behaviour in mutual funds investment is not fully rational,
but behavioural biased.

6.9 Suggestions- Managerial Implication:

This research study focuses on investment behaviour in mutual funds from
behavioural finance perspective. Understanding of investment behaviour is the utmost
important element not only to theorist but also to practitioner and investors
themselves. Some of the managerial implications of the study are as under:

6.9.1 Suggestions-to Investors:

As, it was observed during this study that investors who participated in the survey had
average or less awareness on mutual funds as well as behaviour finance. These
investors are required to be aware about market mechanism generally and behavioural
biases specifically. So, main recommendation for investors is to make constant
attempts to increase their awareness on mutual funds investments.

Studying about the biases and reflecting on their decisions are likely to help them in
better self-understanding to extent and manner in which they get influenced by
emotions while making financial decisions under uncertainty.

It is also suggested to individual investors that they understand their psychological
biases and their objective of investment before they choose any investment avenue in
financial market. They required understanding of their own bias to which they are
vulnerable. This should be reviewed periodically in order to recollect and refresh their
understanding of behavioural traits to reduce the chances of bad decision as well as to improve financial decision in financial market. This can help investors to be rational in their decision making to the level possible.

Investors are required to have either financial literacy or decision support from expert, while investing their hard money. They should maintain some objective ways of investment, to control biases.

6.9.2 Suggestions to Marketers:

This study provided insight into decision making process of investor in mutual funds. As it was found that they considered only certain criteria to judge the performance as well as selection of mutual funds, mutual fund houses can focus on those criteria to maximise the investors base. Their focus was on limited criteria like, past performance, return and dividend, analyst reports. Mutual fund houses or marketer can focus on product differentiation, as well as use of strategies to maximise the spreading keeping in mind that the most important factors investor consider significant i.e. if marketers come up dividend, growth, debt category of NFO, success rate may be higher.

It is again important to marketers that most preferred channel of investment is agents, most preferred time period is up to 3-years and most preferred investment schemes are either of growth equity kind or tax benefits kinds. These insights into investor behaviour would be valuable in introducing forthcoming schemes.

This study provides important information to AMCs about investors (customer) that, investors prefer growth schemes value schemes, they prefer familiar co’s funds as compared to unfamiliar ones, they prefer local companies schemes to others, they prefer balance and income category of funds as compared to others. This information can be helpful for those AMCs who want to come up with new schemes.

6.9.3 Remarks to Regulators:

It is imperative that awareness and financial literacy is not at satisfactory level, it demands more efforts on regulators side. Even, SEBI had undertaken initiative towards the financial awareness; it may be possible that most of the people in state are not aware about it.

As investors are not well versed with their wealth maximisation and rational choice, norms for intermediary to protect the interest of investors may be reviewed by regulators. Investors’ capability to choose the schemes from such huge number is not justified, so regulator can review on permission of new schemes, its criteria etc.
From review of this study it may be clear that role as was envisioned behind mutual funds introduction is not actually performed by this industry, in terms of best investment avenue for savings of small investors. This argument is put up on the basis of poor or negative return of mutual funds schemes.

6.10 Limitations of the study:

Management is a social science including present study on investment behaviour of mutual fund investors, and cannot be generalized for all. The study include ten major cities of Gujarat state, and therefore perception, awareness, preferences and behavioural biases would be of those investors only and that may not be similar in some other part of country. Non- probability convenience sampling method was used in present study in which there might be chances of error. The main weakness of the study was the fact that it aimed to study investors’ behaviour patterns using questionnaires. Moreover descriptive design had been used, which limits the inferences of study in this field.

This study was cross sectional in a given period of time. However, investor behaviour is likely to change according to the market conditions. It would be interesting to study a panel of investors over a period of time and examine the shifts in investor behaviour. Another limitation is the fact, to reach an all the investors all over India was not feasible for this study, so generalisation about an average Indian Investor becomes little difficult.

6.11 Scope for Further Research:

In addition to the various behavioural biases discussed in present study, several other biases warrant further investigation. Another area in need of attention is the role of behavioural biases in investment decision making. Limited research that has been done in field of behavioural finance in India, provide ample scope for research. Results from the study are more indicative in nature than confirmative. However, findings open up various research opportunities where the number of biases studies could be reduced and attempts could be made to produce confirmative results under detailed experimental settings. The nature of field promises that a researcher would be presented with many opportunities to be innovative and creative. To demonstrate the universality of this study’s results, future studies should therefore have a large and more national level sample as well as more even distribution of male and female investors as well as professional investors.