CHAPTER V: Findings, Conclusion and Recommendations
5.1 Introduction

This chapter recapitulates the major findings of the thesis through analysis of data, provides a conclusion and suggestion in line of the results. The purpose of the thesis was to find out the impact of behavioral biases on the extent of investment in the capital market. Specifically, the objective was to study whether high level of overconfidence bias, herd behavior bias and risk tolerance bias significantly affects the investment behavior of Eastern region investors in the capital market. The concept of behavioral finance being a new paradigm of finance incorporates the role of psychology in financial decisions. With the changing capital market scenario and fluctuations, the field has gained momentum. Over the last few decades, many fruitful strides have been taken and behavioral viewpoints in the domain of finance have widely been accepted. The assumed rational thinking process has proven to fall prey to preconceived biases, beliefs, attitudes and assumptions. In consequence of that, it leads to sub-optimal results in decision-making.

Investors have relied on the notion of the efficient market hypothesis and rational decision-making since long. The idea of a fully rational decision has taken departure due to the market inefficiency and anomaly. Results obtained from the survey based questionnaire suggested that behavioral bias has a significant positive effect on how an individual behaves and makes a decision. Moreover, results also shed light into the dimensions of overconfidence, herd behavior and risk tolerance which has a greater influence on the decision-making.

As much work is not done in the Indian context, it becomes the obvious choice of a researcher to know how far behavioral finance has affected investors’ behavior in the Indian context. After knowing the facts through the respondents who the general investors of capital market are, the probable solutions are also implied. This dissertation contributes to the overall body of literature by studying the behavioral biases and their impact on the investment decision. The next section presents the findings and conclusion based on the analysis of data in the previous chapter.
5.2 Findings Related to Hypotheses of the Study

H1: Investors with a high overconfidence bias will have a high investment in the capital market.

Possible associations between overconfidence bias and the extent of investment in the capital market were examined through regression analysis for (n=385) respondents. The results have indicated that overconfidence has a significant positive impact on the investment decision of investors in the capital market. The observation suggests that the principal factor analysis has generated dimensions such as: optimism, overestimation, overplacement, self-esteem, self-mastery and unrealistic optimism which have an influence on the way people take decisions. Overconfidence bias as per the literature talks about the tendency of people to overestimate their skills and knowledge. The respondents have shown a distinct preference for overconfidence. These findings are broadly in line with those of researchers such as-(Barber & Odean, 1999; Chu, Im, & Jang, 2012; Skala, 2008; Trinugroho & Sembel, 2011; Van de Venter & Michayluk, 2008; Zaiane, 2013). Although these findings are compatible with those researchers, there are several areas in which they differ from the context of research and respondents demography. In the present study, the context of research was the investment decision-making of general individual investors. Most of the previous studies such as (Barber & Odean, 1999; Hardies et al., 2012) have focused on gender, (Gervais, Heaton, & Odean, 2002) on corporate finance investment decision and (Burks, Carpenter, Goette, & Rustichini, 2013) on measuring overconfidence through various models.

It is important to note that this research has found six dimensions of overconfidence whereas most studies had only three dimensions. This may be due to the self reported questionnaire, understanding of respondents and what they perceive about their level of overconfidence. These dimensions warrant further attention to the context of study. This study contributes to the theory of overconfidence by amalgamating optimism, overestimation, over placement, self-esteem, self-mastery and unrealistic optimism in studying the behavior of individual investors. Based on the above arguments, the hypothesis related to overconfidence bias is significantly proved.
H2: Investors with a high herd behavior bias will have a high investment in the capital market.

The influence of herd behavior bias on the extent of investment in the capital market is examined through regression analysis. The results have shown a significant positive effect of herd bias on the decision-making of individual investors. Two broad themes of herd behavior emerged through principal factor analysis viz. reputation based herding and conformity based herding. What I found from the analysis is that investors have a tendency to follow the group behavior while taking an investment decision. These findings are in harmony with the previous studies (Brahmana, Hooy, & Ahmad, 2012; Chang, Cheng, & Khorana, 2000; Cipriani & Guarino, 2009; Hong, Kubik, & Solomon, 2000; Hsieh, Yang, Yang, & Lee, 2011; Nofsinger & Sias, 1999; Prosad, Kapoor, & Sengupta, 2012; Shusha & Touny, 2016) that have explored the nexus between herd behavior and investment decisions. The findings run counter to the conventional view that measures herding based on models (Hong et al., 2000; Tan, Chiang, Mason, & Nelling, 2008; Wylie, 2005). The study explicitly measures herd behavior empirically on the basis of a self administered questionnaire for individual investors. Moreover, context of research was not to check the presence of herding over a period of time (Christie & Huang, 1995), through volume (Hachicha, 2010b) and for professional investor (Cipriani & Guarino, 2009), rather the aim was to check if herd behavior had an impact on individual investors.

Even in the previous studies, interaction of reputation based herding and conformity based herding was not present together. This indicates that there is a strong disposition of respondents towards herd behavior bias. This also presents the fact that the investors of Eastern India are predisposed to follow other’s actions and this validates the presence of herd behavior with previous studies. On the basis of the above discussion, the hypothesis in relation to the impact of herd behavior is significantly proved.

H3: Investors with a high level of risk tolerance bias will have a high investment in the capital market.

The impact of risk tolerance bias on the investment behavior of individual investors is scrutinized through regression analysis. The results are indicative of the very strong impact of risk tolerance bias as compared to overconfidence bias and herd behavior bias on the extent of investment decision. Conversely, four themes emerged from the principal factor analysis i.e. speculative risk, impulsive risk, financial risk and investment risk. These findings are
consistent with (Chavali & Mohanraj, 2016; Guillemette et al., 2012; Hallahan et al., 2004; Hanna & Chen, 1997; Larkin, Lucey, & Mulholland, 2013; Nobre & Grable, 2015; Statman, 2010; Van de Venter, Michayluk, & Davey, 2012), who had studied to understand the effect of risk tolerance on investment decision. As risk tolerance is a multidisciplinary phenomenon and subjective in nature, the present study only puts emphasis on the risk tolerance behavior of individual investors and how it affects their decision. Most of the previous studies have focused on linkage of risk tolerance with personality (Wong & Carducci, 2013), culture (Statman, 2010), demographic profile (Hallahan et al., 2004) and comparative study between two countries (Root, Senteza, & White, 2014).

Moreover, four factors which were extracted from the principal factor analysis had not been used in the earlier literature altogether. Hence, the interaction among speculative risk, impulsive risk, financial risk and investment risk suggests the preference of investors towards the bias. There is an argument to be made that risk tolerance is an important bias which affects the investors the most amongst all the three biases studied in the present context. From the above discussion, it is proved that high degree of risk tolerance bias has a significant influence on the extent of investment in the capital market.

5.3 Findings in Relation to Research Question

*Do individual investors exhibit deviation from rational investment decision-making based on conventional finance approaches?*

To answer this question that arose at the beginning of the research, the discussions related to overconfidence bias; herd behavior bias and risk tolerance bias are to be considered. The findings of the analyses based on respondents’ survey shown in Chapter 4 posit the presence and profound impact of behavioral biases on the extent of investment in the capital market. This research has identified that the investors of Eastern India are prone to behavioral bias. They are overconfident and optimistic, follow crowd behavior and conform to others’ investment choices, take speculative and impulsive risk in their investments. They fall prey to these biases and take a departure from the rational thinking which is based on conventional finance approach. It is therefore likely that these biases influence an individual and add up to their psychology and perception than the rational models of decision-making.

The correlation statistics showed a moderate and positive correlation between the extent of investment in the capital market and overconfidence bias \((r=.293)\), herd behavior
bias \((r=.371)\) and risk tolerance bias \((r=.507)\). Out of the three correlations, risk tolerance bias has shown the highest correlation among the three behavioral biases. Thus, it is proved that risk tolerance is the most important bias in explaining the investment behavior.

5.4 General Findings

Male investors are more inclined towards investments in the capital market rather than female investors that show male invest more in capital market. Maximum number of respondents falls into the age bracket of 25-34, which shows that young investors have a tendency to invest high in capital market. Most of the respondents are post graduate; married; belong to service class and falls into the income bracket of Rs. 250001-500000. Results revealed that maximum investors have more than 5 years of experience in capital market. Maximum respondents belong to Odisha, invest in both primary and secondary market and have their investment corpus of Rs. 3-5 lakhs on an average basis.

5.5 Findings Related to Factors Motivating Investment in Capital Market

While examining the results for factors motivating investment in capital market, respondents prefer rate of return as the most important factor. They prefer to invest more in capital market because it offers more and better return than any traditional investment product such as fixed deposits. Other factors that affects the investment preference are: market factors (historical data, emerging trend of the stock market, firm position and performance, stock market performance, company results, economic growth, financial statements, company’s expansion and growth), psychological factors (future financial security), economic factors (capital gain, past bonus and tax exemption), hedging factors (diversification, minimization of loss, cutting down the loss, to take a contrary strategy), social (recommendation by experts, financial advisors and stock brokers) and cultural factors (family culture and advice by family members and friends).

5.6 Contribution to the Study

The present study contributes to the existing body of knowledge in the field of behavioral finance and investment behavior in relation to the Indian context. The study of biases and their effect on the extent of investment in the capital market indicates the irrational behavior of investors. My study has made three major contributions to the literature on behavioral finance.
Firstly, out of the three biases, risk tolerance bias is the most pronounced bias that affects the investment decision. So, my study contributes to understand the level of risk tolerance in different context of investment decision. A deeper and consistent inquiry into the risk tolerance would make greater disclosure of interest for investors. As the majority of investors have more than 5 years of experience in the capital market, it is highly important to work on ‘Know Your Client’ on a long term basis and create a win-win situation for both the advisor and investor.

Secondly, target respondents of my study are Eastern Indian investors. Research into exploring the behavior of these people should enhance the general understanding of process of investment in capital market.

Thirdly, research taking into consideration overconfidence bias, herd behavior bias and risk tolerance bias altogether is limited. Therefore, the investigation into the amalgamation of these biases should add to the understanding of behavioral finance in Indian context. It should also draw the attention of finance professionals, advisors, brokers and investors in lieu of investment decisions.

5.7 Limitation of the Study

Although the study has yielded significant results and conceded a substantial contribution to the existing body of knowledge in the area of behavioral finance, there exist some limitations related to the scope of research. This study has investigated only three behavioral biases to know their impact on the investment decision. Geography was restricted to Eastern India and only extended to four states which are- Odisha, West Bengal, Jharkhand and Bihar. Similarly, from anonymity point of view, some investors were reluctant to participate in the survey. Further, only the individual investors have been considered for the survey. The sampling technique employed in the thesis is convenience sampling which creates a problem in the generalizability of the sample. Therefore, keeping in mind the limitations of the research, the next section provides further scope of research based on recommendations and suggestions.

5.8 Recommendation and Suggestion

The thesis provides enormous scope and direction for the future research. As there were only three biases studied in the research, further study could take up more number of biases to get their effect on the overall investment decision. A comparative study could be done among the biases to get which bias has a more significant impact on investment behavior. Further
research into the comparison with the other parts of the country, Western India or Northern India would give a new insight to the problem. This would probe into the similarities or dissimilarities in the behavior of the investors. Another avenue for further study would take into consideration the other markets such as- money market and debt market. Further, investors should be educated more towards the distinctive products available in the market and study should be conducted to know about the investment pattern and preference of the clients.

In India, both NSE and BSE bring education programs for the empowerment and protection of the interest of investors. Therefore, more focus to be given on the investors’ education program relating to fundamental and technical analysis. Accordingly, interactive sessions and training programs should be held frequently to increase the awareness of the new and existing products. Investors should be aware of new upgradations related to policies and guidelines. Youngsters should be given proper training about the investment process and the benefits of investing. Moreover, investors should be aware of the prevalent biases so that they do not become overconfident, do not follow the crowd behavior and display a level of risk tolerance which is beneficial for investments. For this, hybrid investment strategies using qualitative and quantitative behavioral finance tools should help investors to select the right kind of investment strategy.

5.9 Summary and Conclusion

The thesis has answered the research question which is: “Do investors’ exhibit deviation from rational investment decision-making based on conventional finance approaches”? The analysis and their findings have confirmed the presence of behavioral bias into the investment decision. My hypothesis in relation to overconfidence bias, herd behavior bias and risk tolerance bias has been proved significantly. Thus, it can be concluded that behavioral biases affect investment decisions in the capital market and investors deviate from the rational thinking process based on conventional finance approaches.

The thesis has addressed the impact of behavioral biases mainly overconfidence bias, herd behavior bias and risk tolerance bias on the extent of investment decision in Eastern India. Although the degree of impact varied, these factors yet contribute to understanding the behavioral dimensions. Behavioral finance is a new paradigm of finance that seeks to explain how psychological factors affect an individual decision. In case of overconfidence bias, investors have rated themselves ‘better than the average’. This effect is called over placement
and acts as a driving force of overconfidence. Even the optimism of investors makes them overconfident in taking an investment decision. On the other side, self-esteem and self-mastery do enhance overconfidence. In the similar way, overestimation of market trend puts them in the overconfidence zone and unrealistic optimism about the situation increases their level of confidence too.

Further, in consideration to the effect of herd behavior bias, it was found that investors display more of herd bias when they try to conform to the social and group norms due to reputations concerns. Both social and cultural factors consist of herd behavior and in turn affect the investment decision of investors. People tend to follow group behavior in order to maintain their reputation in the group they belong to. Other’s investment choices also influence the investment decision. While studying the effect of risk tolerance bias, speculative risk, impulsive risk, financial risk and investment risk significantly influence the extent of investments in the capital market.

The combined effect of overconfidence bias, herd behavior bias and risk tolerance bias strongly explains the variation in the extent of investment in the capital market. This reveals that investors are not rational in terms of their investment decisions. They deviate from the theory of rationality and are affected by psychological factors. Therefore, it can be said that capital market investors in Odisha, West Bengal, Jharkhand and Bihar overall reflect the investors’ behavior of the Eastern India.

The investors’ behavior also puts an effect on the economy. It depends on the behavior of the Government to enhance and make major reforms in the financial market for further improvements of the investors’ finances. The investors’ decisions to invest more in equity market and less in debt market make the economy grow in a way thus improving their future financial status, provided they have taken calculative decisions and measured their appetite for the risk they are taking. Usually, investors in western countries have this perspective at an early stage of their income. Whereas in India, debt bonds are sold more for fixed income purposes and due to lack of proper calculative investments, investors stay away from equity market.

In a nutshell, the presence of behavioral finance is very much evident in today’s scenario. Not only in the U.S. or U.K. or other Asian countries, this field has got its vibrant presence in India in general and Eastern India in particular. Eastern European investors are more risk averse, but in the U.S. are more ego traders. American and African investors have a
similar level of risk aversion. In the similar way, investors in India display irrational behavior in terms of their investment. Hence, more job lies with financial advisors and fund managers to educate their investors or clients and make strategies that should be tailored to suit the need of their investors. More awareness and education programs should address the needs and objectives of Indian investors. An investor friendly climate and a strong regulatory framework would bring a robust and valid framework to deepen the client-advisor relationship. The role of Government in smoothening the function of a capital market and a robust framework of investment would help in strengthening the investment process with lesser errors.