CHAPTER – II
RESEARCH METHODOLOGY

2.1 INTRODUCTION

Information Technology

Today, we live in the world of Information Technology and its associated services. Individuals, consumers and enterprises, organization and governments are interconnected with the help of information technology. Information Technology sector introduced new opportunities and challenges in India. Maharashtra is also benefited by information technology sector in term of employment and financial growth.

People usually handle all the computers related work like development of products and services, related to information technology. Average IT employee’s income level is quite higher than the average income of other sector such as education, banking, automobile, manufacturing and service.

In economics the behavioral finance is a new and evolving field which is currently in focus. It provides useful insight for investment professionals. The concept of behavioral finance has been introduced in the early 1993. While taking investment decisions the investor’s emotions influence the behavioral aspect of the investors. By and large investor’s decisions are not perfectly rationale. Impact of emotions and cognitive errors on the investor's decision making process is studied by the behavior finance. We can very well confirm that majority of the people can be illogical. The study of behavior finance brings out the errors committed while taking decisions, in majority of the cases, though not in all.

Behavioral Finance is the child of psychology and economics. Influence of psychology on investor’s behavior and its impact on the financial markets is studied by behavioral finance. Relatively the concept is of recent origin. It explains as to why people make irrational decisions. It explains the impact of the emotions and psychology on the investment decisions.
Traditionally it is believed that the people process the data and take appropriate decision however, behavioral finance the people use the imperfect rule of thumb in analyzing the data based on their beliefs which may lead to errors. According to the traditional decision making people are guided by reason, logic and independent in their decision making process. However, in the behavioral finance, the emotions and herd instincts play a dominant role and influence the investment decisions.

Behavioral finance explains the rationale or logic behind irrationality in decision making by the investors. Mainly it is due to the influence of the emotions and not logic. Whenever the market is not efficient, the investors do not show normal behavior but they buy high on speculation and sell low in panic mode.

2.2 IMPACT OF GLOBALIZATION

India embarked upon financial sector reforms way back in 1991 when it became the founder member of the World Trade Order (WTO). The Govt. of India decided to follow a policy of globalization, liberalization and privatization. Prior to this there were several constraints for the industries and business to develop which had hindered India’s economic growth. Being a developing country it was starving of capital formation required for the development. There was ever increasing pressure of the unemployment. All this led to tardy growth of the Indian economy.

However, once the Govt. of India opened doors of its economy to the outside world there was, in a phased manner, free flow of foreign direct investment in India and number of multinational companies established their offices and manufacturing companies in India. Several companies opened up their Research and Development wings in India. Since 1980 onwards the talented Indian had proved their caliber in Silicon City in the United States and they had achieved greater credibility. Therefore, the world was quite aware of the talent and the hardworking ability of the Indian workforce. They were also aware of the cost of the talented labour is relatively cheap. Therefore, number of multinational companies came to India. Besides this India’s demographic condition also was an attraction because it provided a vast domestic market which had no parallel in the world.
In the process number of IT companies established their offices in India. Right from the beginning Pune city because of its advantages of proximity to Mumbai the financial capital of India, efficient Airport, Govt. of Maharashtra’s offers sops, availability of the highly qualified technical staff. Pune city became an attraction of IT industries. Three cities in India namely Pune, Hyderabad and Bangalore became the centre of attraction for IT industry. Today, Pune is a leading IT industrial centre having a large employment. The govt. of Maharashtra has accorded special sops for IT sector development in India. Several monetary concessions in taxes, allotment of plots etc. have been granted. All the leading IT companies have their presence in Pune.

Following are the few illustrations:

a) Tata Consultancy Services
b) Tech Mahindra
c) Cognizant Technologies Ltd.
d) Wipro International
e) Persistent Technologies Ltd.
f) Barclays Technologies Ltd.
g) HSBC Technologies
h) Infosys Ltd.
i) Accenture

These industries have provided employment to about 4 lakh employees Pune and the number is constantly increasing.

2.3 THE IMPORTANCE OF STUDY OF BEHAVIORAL FINANCE

People invest in stocks, real estate, commodity markets, and mutual funds etc. with the sole objective of earning maximum return on their investment. So far as investments in stocks are concerned in a recent research it has been observed that average investors weigh heavily their emotions, no logic, they buy high on speculation and sell low in panic mode. Resultantly the investor suffers losses.
The behavioral finance tries to explain and increase understanding of the various reasons put forth by the investors. One such reason is the influence on emotion in decision making. Every individual has a different perception. The behavior finance brings out the reasons, and the process in financial decision making. Understanding behavioral finance enables the individual to avoid emotion driven speculation which leads to losses and enable the individual to have a rational approach in investment. Once the new investor realizes the importance of behavioral finance naturally over a period of time he/she will become realistic and will take remedial steps to take rational decisions while investing. Through experience these investors get adjusted to rational decision making process.

2.4 SIGNIFICANCE OF THE RESEARCH TOPIC

Of late, because of the increased propensity to save due to high compensation the IT employees get, there is increase in the IT employee’s investment in Stock market. The new investors are likely to commit mistakes and will sustain losses. In order to avoid such an eventuality there is need to study the behavioral finance. It brings clarity about various psychological aspects which have bearing on the individual’s investment decisions.

Thus from the above discussion it is observed that the study of behavioral finance is important. Therefore, the researcher is of the view that it is high time that the influence of the behavioral finance on the IT employees in their pattern of investment needs to be studied and identify probable solutions to overcome this problem. It is on this count the present research is significant.

Utility of the behavioral finance

Earlier research on this topic it has been revealed that there is convincing evidence that the mistakes of investors commit systematic errors and it is due to psychological biases. Indications are there that at times because of mispricing there is mismatching of the resources in the economy. After adopting the policy of globalization there is a sizable increase in the volume of savings. This has led to the opening up of new investment opportunities in the Indian economy. Of late, investment is becoming a subject under behavioral finance than that of finance or
economics. The group behavior has its impact on financial decisions and rationality is being overlooked. The financial decision makers are being influenced by fashions.

2.5 OBJECTIVES OF THE STUDY

Initially the researcher has got himself acquainted with the proposed research topic by reading some books and through interaction with the employees of IT industry. This helped the researcher to have first information about the research topic and the identified area also. This knowledge helped the researcher to set out following objectives of this research.

1. To understand the behavioral finance and its awareness
2. To study and analyze behavioral factors affecting the financial decisions of the individual
3. To study the effects of behavioral finance on financial decisions of Information Technology employees in Maharashtra
4. To analyze the success / failure rate of behavioral finance pertaining to Information Technology Employees.

2.6 JUSTIFICATION OF OBJECTIVES

The concept of Behavioral Finance is relatively a new concept which is introduced in late 20th century. Even for the researcher the concept of behavioral finance was not thoroughly known. Therefore, the researcher studied it. The IT employees are primarily from the electronic engineering discipline and might not have been exposed to this new branch. Therefore, the researcher considered it necessary to find out as to what is the awareness amongst the IT employees about this new concept. Therefore the objective number 1 is set out as above.

There are various behavioral factors like emotion, hearsay, overconfidence etc. which affect the individual’s investment decisions. Hence, the researcher considered it appropriate to study which are having bearing on the financial decisions. These factors were analyzed to find out their impact on the financial decisions. This led to setting of the second objective.
The cities identified for this research study have presence of number of IT industries which have a large number of employee base who get fabulous compensation package and have sizable surplus every month which they want to invest. The researcher therefore, decided to study the impact on the financial decisions, of the behavioral finance on the IT sector employees. Thus the objective number three was set out.

The fourth and the last objective is to assess the success or failure of the IT sector employees financial decisions on the behavioral finance parameter. Such a study may bring out the grass root level situation and in the course of this study may result in some workable solutions to it. Therefore the researcher set out the forth objective as above.

2.7 HYPOTHESES

As has been stated herein above, the researcher before finalizing the research proposal studied the concept of behavioral finance and the IT industries in Pune and its employees on a pilot basis. This enabled the researcher to know about the identified industry and the employees and their investment behavior. This enabled him to finalize the hypotheses of this research study as under:

H₁ Though the people are aware about the behavioral finance, the emotional factors still play an important role in taking financial decisions.

H₂ Though the people are having overall awareness about behavioral finance, their financial decisions are significantly different due to factors like other’s opinion, full or partial supportive information and misleading information, probability V/s possibility, larger groups’ decision and social pressure.

H₃ Though the people are having overall awareness about behavioral finance, the magnitude of the effect of the factors like influence by other’s opinion, full or partial supportive information, misleading information, probability V/s possibility, larger group’s decision and social pressure is different.

H₄ The presence or absence of overall awareness about behavioral finance does not guarantee negative impact of factor like influence by other’s opinion, full or partial supportive information, misleading information, probability V/s possibility, larger group’s decision and social pressure is different.
2.8 JUSTIFICATION OF THE HYPOTHESES

The behavioral finance is a relatively newly developed concept which is concerned with the various aspects like other’s opinion, full or partial supportive information and misleading information, probability V/s possibility, larger groups’ decision and social pressure while taking financial decisions. These aspects are influencing these financial decisions differently amongst the investors. Therefore, the researcher considered it appropriate to study the impact of these aspects on the investors and to find out how far they are taking rational decisions while taking financial decisions.

India is in a commanding position so far as the IT sector is concerned. It is both in software development as well as in Business Process Outsourcing segment of the IT sector. The major revenue of the IT sector comes from the exports and the rate of their profitability is usually high. The employees working in this IT sector are highly skilled, qualified, and have to perform a strenuous job. These employees are having different working hours because their shifts depend on the time slot of the overseas client. The employees do not have a scope for collective bargaining and they are employed as consultant on individual contract. Therefore, there is no job security as such to these employees. The employees are constantly under stress and tension. On this backdrop the IT employees’ compensation package as well as the fringe benefits and the best HR practices for the employees are quite attractive. This leads to the position that most of the employees have surplus generation every month which they want to invest for getting better return on it. These employees as stated earlier find very little time study the investment proposals in greater detail and in a hurry they take investment decisions which may perhaps go wrong. It is on this back drop the researcher has decided to find out the field level reality and formulated the hypotheses as stated above which fully justifies it.

2.9 RESEARCH UNIVERSE

Considering the development of IT sector in India over the past few decades it has been established that the state of Maharashtra is leading in this economic activity. It is fetching voluminous foreign exchange to the country. Even in the state of Maharashtra the growth of this IT sector is not uniform. Therefore, the researcher
collected the data relating the availability of the IT sector industries in the prominent cities in the state and from out of those cities selected some of the cities using certain parameters. Therefore, as far as the research universe of this research is considered, it is the state of Maharashtra and the selected 3 cities where there is concentration of the IT sector and have the major IT workforce.

2.10 DATA COLLECTION

Primary Data

As the research is relating to the employees investment behavior with specific reference to behavioral finance naturally the primary data source is the employees of the selected IT employees. For this purpose the employees from both genders have been randomly identified.

Secondary Data

Previous research through Ph. D. Theses and Research papers published by the Research Scholars, various reference books, committee reports, journals and periodicals and newspaper articles, provided the basis for collecting the secondary data. Pune is an Educational Hub where lots of well-equipped libraries are available did not pose any difficulty.

2.11 SAMPLE SIZE

In any research deciding the sample size for the study is a crucial factor. It mainly depends on the topic of research and the proposed respondents. While identifying the respondents for this study the researcher has selected employees from both the genders. This is mainly because the earlier research work has observed that gender also has an impact on the investment decisions. IT employees are all highly educated in the electronic / IT branch of engineering. Hence no much stress has been paid on the educational background. In the following paragraphs the parameters used for identifying samples have been elaborated.
Criteria applied for selection

The Indian State of Maharashtra came into existence on 1 May, 1960. It is also known as Maharashtra Day, initially with 26 districts. 10 new districts have been created since then, and currently the number of districts in the state is 36. These districts are grouped into six administrative divisions shown below.

Fig. 2.1
Map of Maharashtra showing division wise classification of the districts
Table 2.1
Maharashtra’s Regions and Divisions

<table>
<thead>
<tr>
<th>Name of Division (Headquarter)</th>
<th>Region</th>
<th>Districts</th>
<th>Largest City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amravati Division</td>
<td>Vidarbha</td>
<td>Akola</td>
<td>Yavatmal</td>
</tr>
<tr>
<td>(HQ: Amravati)</td>
<td></td>
<td>Amravati</td>
<td>Washim</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buldana</td>
<td>Amravati</td>
</tr>
<tr>
<td>Aurangabad Division</td>
<td>Marathwada</td>
<td>Aurangabad</td>
<td>Latur</td>
</tr>
<tr>
<td>(HQ: Aurangabad)</td>
<td></td>
<td>Beed</td>
<td>Nanded</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jalna</td>
<td>Parbhani</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Osmanabad</td>
<td>Hingoli</td>
</tr>
<tr>
<td>Konkan Division</td>
<td>Konkan</td>
<td>Mumbai City</td>
<td>Palghar</td>
</tr>
<tr>
<td>(HQ: Mumbai)</td>
<td></td>
<td>Mumbai Suburban</td>
<td>Raigad</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thane</td>
<td>Ratnagiri</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sindhudurg</td>
</tr>
<tr>
<td>Nagpur Division</td>
<td>Vidarbha</td>
<td>Bhandara</td>
<td>Gonda</td>
</tr>
<tr>
<td>(HQ: Nagpur)</td>
<td></td>
<td>Chandrapur</td>
<td>Nagpur</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gadchiroli</td>
<td>Wardha</td>
</tr>
<tr>
<td>Nashik Division</td>
<td>Khandesh</td>
<td>Ahmednagar</td>
<td>Nandurbar</td>
</tr>
<tr>
<td>(HQ: Nashik)</td>
<td></td>
<td>Dhole</td>
<td>Nashik[^a]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jalgaon</td>
<td></td>
</tr>
<tr>
<td>Pune Division</td>
<td>Paschim</td>
<td>Kolhapur</td>
<td>Satara</td>
</tr>
<tr>
<td>(HQ: Pune)</td>
<td>Maharashtra</td>
<td>Pune</td>
<td>Solapur</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sangli</td>
<td></td>
</tr>
</tbody>
</table>

The researcher has selected three major cities where headquarter or respective division is available.
For deciding the geographical area of this research the researcher has observed that there is no uniform spread of this IT industry all over the state of Maharashtra. It has been concentrated in few progressive districts because of the availability of the
state government as well as local self-government’s support, and infrastructural facilities like uninterrupted power supply, proximity to the international air ports, availability of the skilled staff and other civic amenities. Therefore, the researcher has in the first identified those districts where the IT industry has its conspicuous presence. In rest of the districts there is stray presence of the IT industry and hence those are left out. The districts where IT industry’s presence is strongly felt are:

1. Mumbai
2. Pune
3. Nasik

Once the above districts have been identified the researcher has thought of selecting the IT companies for this research. The IT companies have been identified based on their staff strength as they were to be surveyed for this research. With a view to having a broad base for identification of the respondents the researcher has also covered a few medium sized IT companies.

While selecting the number of respondents, as the researcher is based at Pune the more number of respondents have been identified from Pune District. IT company employees are really overburdened so far as their duty hours are concerned. Hence, they need more follow up for obtaining the data. Therefore, follow up with Pune based IT employees was a convenience factor. So far as number of IT companies is concerned Pune has more number of IT companies than Mumbai. This aspect has also been given due consideration while identifying the number of respondents.

While selecting the respondents random sampling method has been applied. With a view to have a broad based sample and as the investment capacity differs from the compensation packages the researcher has covered a wide range of categories of the employees i.e. Sr. Executives, Managers, Project Managers, and the Team members.

So far as reasonability of the sample size the researcher has to state that the IT companies identified have their offices spread all over the country and even at some
overseas places. The number of Pune or Nasik or Mumbai based IT employees was not disclosed by the IT employees. The total number of the employees is available in the respective company’s annual reports available on the websites. This number if totaled together comes in several lakhs. Therefore, the researcher has considered the researcher universe as infinity and if a statistical sample size is arrived for this infinity numbers of employees the number of comes to 389. However, the researcher considered it appropriate to collect the data from a larger size and hence he decided to identify 900 employees. However, in reality, there were some employees who failed to respond to the questionnaire despite persistent follow up, in reality the researcher could collect the data from 811 employees and the same has been analyzed in this research.

After applying this criterion, the IT companies (including IT enabled services) and the number of respondents identified for this study were as under:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the city</th>
<th>Name of the company</th>
<th>No. of identified respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mumbai</td>
<td>1. IBM (India) Pvt. Ltd.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Tata Consultancy Services Ltd.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Tech Mahindra Ltd.</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>Pune</td>
<td>1. Accenture</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Barclays Technologies Ltd.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Cognizant Technologies Ltd.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Infosys Ltd.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. I- source Info systems Pvt. Ltd.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. KPIT Technologies Ltd.</td>
<td>50</td>
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<tr>
<td></td>
<td></td>
<td>7. Syntel Pvt. Ltd.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Tech Mahindra</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Wipro Technologies LTD.</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. WNS Global Services</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>Nasik</td>
<td>1. ESDS Software Solutions</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. I-Trix Incorporation</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Netwin System Software (I) Pvt. Ltd.</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Siemens India Ltd.</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. WNS Global Services –</td>
<td>40</td>
</tr>
</tbody>
</table>

2.12 QUESTIONNAIRE

The researcher had designed a meaningful questionnaire to collect the primary data from the randomly identified employees. For the purpose of formulating this research proposal the researcher had conducted a pilot study of IT Employees in Pune
city. The researcher used this questionnaire in the pilot study and refined it before it was applied in the final research project.

2.13 TOOLS AND TECHNIQUES USED FOR ANALYSIS

The primary data collected from the identified respondents using the questionnaire has been presented using tables. Wherever required percentages and ratios have been calculated and shown in the data. For easy and better understanding of the data, the researcher has also resorted to give graphical presentation.

The following statistical tools and techniques have been used:-

- **Percentage**: For comparing various variables the data has been expressed in terms of percentage.
- **Correlation**: Through this tool the correlations between the two variables has been shown. It denotes the change effect of one variable over the another variable.
- **Diagrams and Graphs**: Graphical presentation of data is easy to understand and interpret the same.
- **Averages**: This tool is commonly used. The average number represents neither the highest nor the lowest value.
- **Anova**: To analyze the variances i.e. factors of behavioral finance
- **Cronbach’s Alpha**: To check reliability of data
- **Statistical tools**: Mean, Median, Mode, Standard Deviation, Kurtosis, Skewness, Frequency, Chi-square test

2.14 SCOPE

There are various types of investment schemes / options. E.g. Investment in bank deposits, investment in stocks, investment in commodity markets, investments in real estate etc. Generally whenever a reference is made to behavioral finance generally it is referred to in relation to investment in stocks, this is mainly because of there are number of studies carried on this type of investment. However, for the purpose of this study, the researcher has taken overall view which encompasses all the types of investment and therefore, the researcher is referring as “financial
decision” in all the discussions in this research. Therefore, this study has a wide scope covering all the types of investments.

The topic of the current research is based on the relatively recently developed branch of economics. The current study has covered the IT employees and that to in the identified cities of Maharashtra State where there is notable presence of IT industries.

**Time Frame of the research**

The period covered by this research is the Calendar years 1\textsuperscript{st} January 2003 to 31\textsuperscript{st} December 2012.

Although the study is restricted for employees in IT industries because of the heavy compensation package the outcome of this research can be generally applied to the high compensation package employees from the other industrial sector with little medication if so required.

**2.15 LIMITATIONS OF THE STUDY**

The present research has some limitations for application of the findings of this study in as it is form. The research is restricted to only select cities in Maharashtra, There are many other cities having IT companies which are outside the view of this research study. The research study is confined only to Information Technology Employees. The number of employees in IT industries of the IT companies in the identified cities is too large. Because of the time constraint, financial limitation, and more particularly the collection of data from the heavily burdened IT employees has proved to be a tough task. Employees are reluctant to spare time to fill up the questionnaire and the researcher had to pursue them.

**2.16 CHAPTER SCHEME**

**CHAPTER – I: INTRODUCTION**

The researcher has introduced the research topic in this chapter. The researcher has explained the concept of behavioral finance, profile of Indian Information Technology Industry, its presence in major cities of Maharashtra State, scope for it. Further the researcher has discussed various avenues for investment, and
interdisciplinary nature of the research topic. The chapter also deals with need for behavioral finance study

**CHAPTER – 2: RESEARCH METHODOLOGY**

This chapter has covered significance of the research, objectives and hypotheses set out for this research, and other aspects of research methodology like sample selection, size of the sample, statistical tools used, Scope and limitation of the research, chapter scheme etc.

**CHAPTER – 3: REVIEW OF LITERATURE**

In this chapter the researcher has taken a brief review of the previous research on similar topic from the Ph. D. theses as well as the research papers presented/published by the various eminent scholars, articles in the books, journals and periodicals. It also covers the newspaper articles on the subject as well as a brief review of the various topic related websites.

**CHAPTER – 4: PROFILE OF THE STUDY AREA AND THE SELECTED INFORMATION TECHNOLOGY COMPANIES.**

This chapter covers a brief profile of the study area and the identified companies for this research. This helps in better understanding the research work in its right perspective.

**CHAPTER – 5: ANALYSIS AND INTERPRETATION OF DATA**

In this chapter the primary data is presented using tables, graphs and analyzed with the use of statistical tools etc. It also covers validation of hypotheses.

**CHAPTER – 6: FINDINGS, SUGGESTIONS, CONCLUSION**

In this chapter the researcher has presented observations keeping in mind the data interpretation and has also offer suggestions wherever possible. The chapter also covers scope for further research and is concluded on a positive note.

**BIBLIOGRAPHY**

**ANNEXURE: Questionnaire:** A copy of the questionnaire used.
2.17 SUMMARY

In this chapter the researcher has discussed the significance and detailed overview of suitably followed research methodology of this research like its objectives and hypotheses framed, scope and limitation of this research, type of research, data collection, primary data, secondary data, sources of data, the questionnaire, data analysis and its interpretation, statistical tools used for validation of the hypotheses, and at the end observations / findings and suggestions and conclusion.