Chapter 3

Research Methodology
3.1 RESEARCH METHODOLOGY (INTRODUCTION)

Research methodology is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Research methodology is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of the data.

The financial environment has undergone tremendous and spectacular change over last two decades. The frequent rise and fall of inflation rate, the volatility of interest rates, stock prices and foreign exchange rates, the technological developments in the processing and dissemination of information, etc. have contributed to the financial revolution sweeping across the globe today. As a result of these sweeping changes, the abilities of financial markets to mobilize more savings have improved. A large share of domestic savings in India is contributed by the household sector represented by individual investors. But, the individual investors who occupy a strategic place among various economic units in a country are confronted with complex set of investment alternatives. This is because of the innovations with respect to financial instruments. The individual investors have to choose the institution and instrument classes from many varieties. The important financial instruments include mutual fund units, equity share, debentures, bonds, pension schemes, fixed deposits with banks, and tax saving alternatives like provident funds, life insurance policies national saving certificates, infrastructure bonds, etc. Again for each alternative instrument category, investors have to make decisions regarding institution, amount to be invested, period for investment etc. The investors with investible funds are selective in investing. The investment
behavior of individuals is in-fact, very much a direct and systematic function of personal circumstances and market conditions as well.

Investment attitudes results in portfolio decisions. How the investors try to balance various considerations in his choice of financial assets will be understood better if empirical data on such choices are available. Therefore, this study is throwing interesting light on trends in investment preference of investors in recent years as well as their future behavior. They consider own study and observation as important factors for the investments. Most of investors like to get the information from the financial news papers and magazines. In accordance with reviewed literature, the major determinants of portfolio composition were found as age, income, education, home ownership, household size, occupation, pension status and marginal tax rate.

Most of the earlier studies on investor’s portfolio composition have focused on the impact of the above-mentioned variables; however there are very few studies which were focused on the financial product awareness and financial planning of the investors. Very few studies, particularly in the U.S. have tried to study the relationship between financial knowledge, financial planning and individual portfolio composition.

A few among the Indian studies quoted in the literature review were focused towards the investors in capital market and not the households who did not invest in the capital market instruments. The reforms in Indian financial sector led to the development of financial market in a complex manner and the shift from- Defined return financial instruments such as
insurance, pension plans, and post office schemes, contributory pension plans, to variable return financial instruments like ULIPs, mutual funds, equity shares, derivatives and commodities etc., As a result, Indian investors are facing a great challenge in managing their investment.

3.2 OBJECTIVES

The present study is done to find out the determinants of investors’ behavior in Indian stock market. But In India, very few studies was done on this topic and the focus of almost all the studies were towards the investor’s preference and stock market.

The present literature available in the study of investors’ behavior in India was either to study the nature of household sector investments or to study the general savings behavior of Indian households. To fill the gap between the studies done and the theoretical requirements, the present research is an attempt to find out the determinants of investors’ behavior in Indian stock market

- To identify the demographic factors of investor that influence the investors’ behavior
- To study the psychological factors those affect the investors’ behavior.
- To find out impact of company fundamentals that influence the investors’ behavior.
- To study the external factors that affect the investors’ behavior
- To find out the impact of foreign institutional investor (FIIs) on investors’ decision making process.
3.3 HYPOTHESES

- There is no significant relationship between demographic factors (gender, marital status, income level, occupation, etc.) and investors’ behavior.
- There is no significant relationship between psychological factors and investors’ behavior.
- There is no significant relationship between company fundamentals and investors’ behavior.
- There is no significant relationship between external factors and investors’ behavior.
- There is no significant relationship between FIIs and investors’ behavior.

3.4 Selection of variables

In this study, following variables are as per the objectives.

In demographic factors, variables like gender, age, occupation, annul income, marital status, number of dependents on investor, type of family, savings of investor are selected.

In Psychological Factors, variables like investor get expected return on decision, investment holding period is spread over long period of time, investment decisions are investment objectives, degree of risk tolerance towards my investment decision, buy on the sentiment of market, investment decision on pulse, reactions towards my decision are normal are selected.

In company fundamentals, variables like expected dividends, tax affect on profit, minimizing risk, expected corporate earnings, dividend paid, financial statement condition, stock
marketability, firm reputation in industry, preference for firm product and services, stock affordability, firm governing body, firm strong position in industry, contribution of firm towards social cause, firm perceived ethics are selected.

In external factors, variables like current economic indicators, information obtained from existing shareholder, information obtained from internet, general and financial press coverage of firm stock, fluctuation and development of stock index, government holding, recent price movement of firm stock, family member opinion, friend opinion, coworker opinion, broker recommendation for stock are selected.

In FIIs, variables like Investment in stocks in which FII have exposure, FII only invest in large cap stock, When FII buy market moves up FII only invest in mid cap stock, FII have significant impact on market are selected.

### 3.5 RESEARCH METHODOLOGY

Research methodology here includes research problem, research design, sampling unit, sampling size, sampling technique, Sampling method, and data collection method & data analysis.

#### 3.5.1 Research Problem

The process of financial reforms implemented in the country has created remarkable changes in various aspects of its financial system. Stock market, in particular has undergone radical transformation both in terms of size and sophistication and is now comparable to the developed markets with respect to turn over, market capitalization and efficiency.
But, the success of the stock market reform process should not be viewed from the angle of how much amount of money is being turned over or how much portfolio investment flowed in. The real test is how much benefit all this brings in terms of development, including saving mobilization, capital formation, and employment generation and what kind of impact it has made on the investors’ behavior.

An adage says “a problem well defined is half solved”. This study deals with the “determinants of investors’ behavior in financial Market”. This project studies the relationship between determinants of Investors & their buying behavior. For this purpose India’s two major indices i.e. Sensex and S&P CNX Nifty are selected. These two indices, in a way, represent the picture of India’s stock markets. So this project reveals the impact of various factors on the buying behavior of investor in financial market. This study is throwing interesting light on trends in investment preference of investors in recent years as well as their future behavior. There may be many factors which can affect the buying behavior of investor. But demographic factors, psychological factors, company fundamentals, external factor & impact of FIIs are considered for this study.

3.5.2 Research design:

Design regarding what, where, when, how much and by what means concerning, an enquiry for research study constitutes research design. Questionnaire and interview method is designed and administered to the respondents for the objectives of the study.
3.5.3 **Type of research**

In this study, both exploratory and descriptive research is done.

Exploratory research is defined as the initial research into a hypothetical or theoretical idea. This is where a researcher has an idea or has observed something and seeks to understand more about it. An exploratory research project is an attempt to lay the groundwork that will lead to future studies, or to determine if what is being observed might be explained by a currently existing theory. Most often, exploratory research lays the initial groundwork for future research.

Once the groundwork is established, the newly explored field needs more information. The next step is descriptive research, defined as attempts to explore and explain while providing additional information about a topic. This is where research is trying to describe what is happening in more detail, filling in the missing parts and expanding our understanding. This is also where as much information is collected as possible instead of making guesses or elaborate models to predict the future - the 'what' and 'how,' rather than the 'why.'

3.5.4 **Sampling unit:**

Sampling units are Individual investors from urban area who was asked to fill out questionnaire. They comprise of employees of MNC, government employees, self employed, professionals and other investors. Corporate investors are not considered in this study.

Following points are taken into consideration for selecting sampling unit.

**(i) Income level of investor:** The investors whose income is below 10 lakh p.a are selected for this study.
(ii) **Education level:** The investors who have minimum graduation degree are selected for this study.

### 3.5.5 Sampling Area

Haryana state was selected as a sampling area. In Haryana urban population is selected for this study. Selection of sampling area is two stage process.

The First stage was selection of strata: 2011 census population of Haryana reported at 2.5 crores people in Haryana. The given population was divided into two strata of urban and rural households. The rural and urban strata consisted of 1,65,09,359 and 85,42,103 people respectively. Data related to urban population, density of the urban households per square km. and percent of urbanization were collected through Socio-Economic Review of Haryana 2010-11. The study was concerned with investors' behavior towards savings and investments. The probability of getting better response from the respondents increase with the investors having a reasonable income and opportunities to save. Previous studies supports that ownership of risky assets increases with degree of urbanization. This may reflect the supply effect; with the increased density of banks and financial institutions, the investors were having a wide array of products to invest in. At the same time, through cross selling of the financial products a single shop for their investment needs (with various reengineered products serving their multiple investment needs) on demand effect, the information spill-over between households is expected to be larger, in densely populated areas. The quantity and quality of financial information available is higher in urban area. Selection of the urban households was done under these premises.
(i) **Selection of strata:**

The second stage of sampling was the division of strata. The total sample frame was divided into four equal stratas of Haryana. Assumption was made that each strata is a representative of the entire population. There are 21 districts in Haryana with total urban population of 88,92,089 households. Selection of strata in Haryana was on the basis of population of urbanization and urban household density. The highest percent of urbanization among all the districts in Haryana was in Faridabad and the lowest was in the Mewat. The selected four stratas for the study in Haryana are given below.

**Table 3.1**

<table>
<thead>
<tr>
<th>Strata 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Urban Population</td>
</tr>
<tr>
<td>Panipat</td>
<td>5,52,945</td>
</tr>
<tr>
<td>Ambala</td>
<td>5,04,541</td>
</tr>
<tr>
<td>Yamunanagar</td>
<td>4,72,792</td>
</tr>
<tr>
<td>Bhiwani</td>
<td>4,22,578</td>
</tr>
<tr>
<td>Panchkula</td>
<td>3,06,659</td>
</tr>
<tr>
<td>Total Population</td>
<td>22,59,515</td>
</tr>
</tbody>
</table>
### Table 3.2

**Strata 2**

<table>
<thead>
<tr>
<th>District</th>
<th>Urban Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hisar</td>
<td>5,53,026</td>
</tr>
<tr>
<td>Sonipat</td>
<td>4,51,687</td>
</tr>
<tr>
<td>Rohtak</td>
<td>4,44,819</td>
</tr>
<tr>
<td>Karnal</td>
<td>4,56,030</td>
</tr>
<tr>
<td>Sirsa</td>
<td>3,20,490</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td><strong>22,26,052</strong></td>
</tr>
</tbody>
</table>

### Table 3.3

**Strata 3**

<table>
<thead>
<tr>
<th>District</th>
<th>Urban Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faridabad</td>
<td>14,29,093</td>
</tr>
<tr>
<td>Jhajjar</td>
<td>2,42,974</td>
</tr>
<tr>
<td>Kaithal</td>
<td>2,35,690</td>
</tr>
<tr>
<td>Fatehabad</td>
<td>1,79,340</td>
</tr>
<tr>
<td>Palwal</td>
<td>1,59,762</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td><strong>22,46,859</strong></td>
</tr>
</tbody>
</table>
### Table 3.4

<table>
<thead>
<tr>
<th>District</th>
<th>Urban Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gurgoan</td>
<td>10,42,000</td>
</tr>
<tr>
<td>Kurukshetra</td>
<td>2,98,935</td>
</tr>
<tr>
<td>Jind</td>
<td>3,23,923</td>
</tr>
<tr>
<td>Rewari</td>
<td>2,31,411</td>
</tr>
<tr>
<td>Mahendragarh</td>
<td>1,82,975</td>
</tr>
<tr>
<td>Mewat</td>
<td>1,24,017</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td><strong>22,03,261</strong></td>
</tr>
</tbody>
</table>

#### 3.5.6 Sample size:

A sample of 1000 investors is decided as sample for the present study. They are comprised from the different part of Haryana.

#### 3.5.7 Sampling technique:

A strata sampling technique was used for the selection of sample individual Investor for the study. Haryana state was divided into four stratas. After selection of strata, the sample size was determined with the help of sampling distribution of the proportion. In the last stage of sampling, strata-wise sample was selected. After that investors were approached for filing up questionnaire. Filled-up questionnaire was scrutinized and collected data was classified and tabulated according to objective of the study.
3.5.8 **Sampling method:**

Stratified method is used in this study. Stratified sampling is a probability sampling technique wherein the researcher divides the entire population into different subgroups or strata, then randomly selects the final subjects proportionally from the different strata.

3.6 **Data collection**

The current study intends to find out the affect of various factors on investors’ behavior. It includes composition of individual investors’ portfolio, the determinants of the composition of the individuals’ portfolio, general saving and investment behavior. This study find out the impact of psychological, company fundamentals, external factors, FII and demographical factors (such as Age, gender, marital status, type of family, occupation, income level) with investors’ portfolio composition. The data related to all above variables for the study were collected through primary as well as secondary sources. Both primary and secondary sources of data are used for the analysis.

3.6.1 **Primary data**

A structured questionnaire was prepared to collect the demographic information such as age, income, education, occupation, household size and the level of planning done by the individual investor using a series of questions.

Information was collected by conducting a survey by distributing a questionnaire to the 1900 investors in the different region in Haryana. These 1900 investors would be of different age group, different occupation. Out of 1900, 1000 questionnaires that were complete in all aspects & that were selected for the study.
A pilot test was conducted in Ambala for the testing of questionnaire and discussions were held with guide, faculty members and peer group to validate the contents of the questionnaire. The responses to these questionnaires were used in analyzing the composition of households, general saving and investment behavior of household and determinants of household portfolio composition. Assuming 50 percent response rate nearly 750 questionnaires were circulated and responses obtained were 345. Out of 345, only 280 were complete in all aspects & that were relevant for the study and hence the rest (65) were discarded.

### 3.6.2 Secondary data

The secondary data used in the research was collected from varied sources and compiled as per the requirement of the study. For a developing country like India, which has been typically at the infant stage of micro data collection, there was very little information available on household portfolios.

Ideally the researcher was interested to know how much wealth is held in which different assets and by which people. Such an analysis was not possible using any of the official household surveys in India, compared to many developed countries such as UK, Netherland, Japan, Italy and many more. In India saving is estimated and published by Central Statistical organization (CSO) in their report “National Accounts Statistics” on a yearly basis. According to CSO, Saving is the balancing item of the income and outlay accounts and use of disposable income account, of producing enterprises and households, government Administration and other final consumers.
This data was collected by using the following means.

- Articles in financial newspapers (Economic Times & Business standard).
- Investment magazines, business magazines and financial chronicles.
- Expert opinion published in various print media.
- Books written by various Foreign and Indian authors on investment.
- Data available on internet through various websites.

3.7 Data Analysis

Collected primary and secondary data was classified and cross-tabulated. Keeping in mind the size of the sample for the present study, a preliminary analysis was done. These were:

- Descriptive Statistics
- Assessment of Reliability (Cronbach α)
- Factor Analysis (Principal Component Analysis of Factors)

After that in order to study the relationships between different variables, Chi–Square test and Pearson’s Coefficient of Correlation is used to analyze the data.

Pearson's chi-square test is the best-known of several chi-square tests – statistical procedures whose results are evaluated by reference to the chi-square distribution. Its properties were first investigated by Karl Pearson in 1900. In contexts where it is important to make a distinction between the test statistic and its distribution, names similar to Pearson X-squared test or statistic are used.

It tests a null hypothesis stating that the frequency distribution of certain events observed in a sample is consistent with a particular theoretical distribution. The events considered must be
mutually exclusive and have total probability 1, i.e., either a person is investing in a specific financial product or not investing. A common case for this is where the events each cover an outcome of a categorical variable. A simple example is the hypothesis that an ordinary six-sided die is "fair", i.e., all six outcomes are equally likely to occur. Pearson's chi-square is used to assess two types of comparison: - tests of goodness of fit and tests of independence.

The correlation is one of the most common and most useful statistics. A correlation is a single number that describes the degree of relationship between two variables. Correlation is a statistical technique that can show whether and how strongly pairs of variables are related. If a population or data-set is characterized by more than two variables, a partial correlation coefficient measures the strength of dependence between a pair of variables that is not accounted for by the way in which they both change in response to variations in a selected subset of the other variables.

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. A "high" value for alpha does not imply that the measure is unidimensional. If, in addition to measuring internal consistency, you wish to provide evidence that the scale in question is unidimensional, additional analyses can be performed. Exploratory factor analysis is one method of checking dimensionality. Technically speaking, Cronbach's alpha is not a statistical test - it is a coefficient of reliability (or consistency).
Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Below, for conceptual purposes, we show the formula for the standardized Cronbach's alpha.

\[
\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}
\]

A preliminary investigation was undertaken. The purpose of the pilot study is to test the quality of the items in the questionnaire and to confirm the feasibility of the study. Cronbach’s alpha method was applied. It was found that the Cronbach’s alpha value was more than 0.700 of all the factors which was statistically significant.

3.8 Justification for choosing sample area, income level and education level

The time and cost constraints of the study on an all- India basis is not viable for an individual researcher. Thus the study was carried out in Haryana state only. In Haryana state, four strata were made for this study. Every strata has equal urban population.

The study was concerned with Savings and Investments behavior of individual, thus the facts considered from selection of the strata were region wise Gross Domestic Product, Per capita income, literacy rate and percent of urbanization.
In this study, investors from urban area are selected rather than rural area. Because in urban area, investors are more aware of financial products. Investors are having more financial literacy. In urban area due to increased density of banks and financial institutions, the investors are having a wide array of products to invest in. At the same time, cross selling of the financial products (a single shop for their investment needs) is expected to be larger than rural area. The quantity and quality of financial information available is higher in urban area. That is why urban area is selected.

In this study, investors who are having the income less than 10 lakh p.a are selected for this study. Because this is done for the individual investors and most of investors are falling in this category of income.

This study is done with reference to Indian stock market. This study is concerned with various financial instruments and the probability of getting better response from the respondents increases if respondents are having good education background. That is why investors with minimum graduation degree are selected for this study.

3.9 Scope of study

The study of investor’s behavior plays an important role to mobilize savings and investment activities in economy. Similar type of research can be conducted with the large sample size covering major area of investor’s population. A census survey of investors like other developed countries on the income and investment patterns of investment sector can be
helpful for the financial system of the country. Behavior of investors can be further understood from that statistics. There is an upsurge need for the coordinated research on investors’ behavior. If a conceptual model can be developed in investment and saving sector, it can be helpful for individual investors for the construction of their optimal financial portfolio. This can be done by government agencies working for investor’s community welfare.

Peculiar characteristics of Indian investors can be further addressed, for instance, the equity cult is still at a nascent stage and penetration is limited to the population to urban areas.

A study on behavior of investors who resort to online trading is likely to show interesting results.

In this study, individual investors are considered for this study. Corporate and institutional investors are not considered for this study. Similar type of research can be conducted with Corporate and institutional investors.

One particular behavioral phenomenon can have a multiple definition and manifestations. Therefore the relevance of each phenomenon can be treated as a further research question on its own, and addressed using appropriate techniques.

### 3.10 Limitation of study

All research studies have their limitations and this study is no exception. In designing this study, it was attempted to be as scientific as possible, the present study nevertheless has the following limitations.
Due to reluctance of the respondents to part with information relating to their income and investment made, the data collection was very difficult. Respondents did not want to reveal their income and savings in absolute terms hence the questionnaire had to be modified to get the data relating to the income level and savings level. This response biases can also be considered as one the limitation of the study.

Some of the respondents are indecisive with respect to different investment related queries. They are not sure of their goals in savings and investments. The responses may not be valid.

The study covers only urban population of Haryana. Hence the findings may not be applicable to the rural parts of Haryana where there are negligible numbers of investors in the capital market in comparison to urban part.

The study is mainly based on the primary data and secondary data. But primary data is collected only from 1000 respondents from Haryana. The inherent drawbacks of the primary data are applicable to the study.