CHAPTER – 3
RESEARCH METHODOLOGY

3.1 Introduction

Research Methodology is a way to systematically solve a problem. It may be understood as a science of study where research is done scientifically. It includes various steps that are generally adopted by a researcher in studying his research problem.

According to J.W. Best (1999)
"Research is considered to be formal, systematic, intensive process of carrying on the scientific method of analysis. It involves a more systematic structure of investigation usually resulting in some of formal record of procedures and report of result or conclusions."

3.2 Research Statement

The problem studied in the present context is entitled - "Profile and Perception of Investors towards Mutual Funds - A Study of Selected Cities of Gujarat State" The research work focuses on investor's perception towards Mutual Funds in cities of Surat, Ahmedabad and Vadodara in Gujarat State. The study has been undertaken to find the answers to the following questions:

1. What are the factors that influence investment in Mutual Funds?
2. What are the problems faced by investors of mutual fund?
3. Which tools of investment are popular among the investors?
4. What is the pattern of investment of Mutual Funds?
5. What are the factors that discourage investors of Mutual Funds?
3.3 Research Design

The research design is the conceptual structure within which research is conducted. It constitutes the blueprint for collection, arrangement and analysis of data. A research design includes an outline of what the researcher will do from writing the hypothesis and its operational implication to the final analysis of the data. I have used the descriptive research design in this study.

3.3.1 Objectives of study

(A) Main objective of the study is:

To study the perception of investors towards Mutual Fund.

(B) Subsidiary objectives of the study are:

1. To identify the problems of investors in investing their money in mutual fund scheme.
2. To analyze the investors level of fulfillment regarding mutual fund.
3. To examine the pattern of investment in Surat, Vadodara and Ahmedabad city.
4. To study investors preference with regards to mutual fund v/s other investment products.

3.3.2 Nature of Data and Sources of Data

Primary as well as secondary data are used for the study. Primary data is the data that is collected for the first time and that is original in nature. This data has been collected through questionnaire. Secondary data is the data which has been collected by someone else. Secondary data has been collected from newspapers, magazines, websites, general discussion with brokers of BSE, NSE and published data of BSE, NSE and Mutual Fund companies.
3.3.3 Tools for data collection
The study covers both primary and secondary data. Primary data was collected with the help of questionnaire which was distributed and collected from the respondents of Surat, Ahmedabad and Vadodara cities of Gujarat State. The questionnaire has two sections; the first section relates to demographical profile of respondents and the second part relates to the perception of investors of Mutual Funds. The data has been collected directly by door to door investigation and by post. Sample respondents were requested to give a free and frank response.

3.3.4 Sample design
Purposive sampling method is used to collect data. Hundred respondents each are taken from three highly populated cities of Gujarat namely, Surat, Ahmedabad and Vadodara cities. A structured questionnaire was given to 300 respondents of the selected cities which consisted of both open ended and close ended questions.

(A) Population: - Population includes Mutual Fund investors of selected cities of the Gujarat State.

(B) Sample element: - Individual Mutual Fund investors are the sample element.

(C) Sampling technique: - Purposive sample technique is used to select the sample.

(D) Sample size: - The sample size of 100 respondents each was taken from Surat, Ahmedabad and Vadodara cities. Total 300 respondents from these cities were asked to fill up the questionnaire.

(E) Questionnaire design: - A Structured questionnaire has been prepared and distributed among the selected Mutual Funds investors of the Surat, Ahmedabad and Vadodara cities to study their perception and preferences regarding mutual funds.
3.3.5 Area of the study

The study is limited to the three cities of Gujarat State. Surat, Ahmedabad and Vadodara cities are selected for research study as they are the three highly populated cities in Gujarat.

3.3.6 Data Scaling and Measurement

In order to increase accuracy of research work, qualitative data scaling techniques such as nominal scale and ordinal scale are used.

3.3.7 Tools and Methods of Data Analysis

3.3.7.1 Tabulation and Classification of data

The data was collected through a questionnaire and tabulated. The data has been classified on the basis of age, education, qualifications, occupation, monthly income, gender, marital status, monthly savings; monthly expenditure held by the respondents. Cross tabulation has been done according to different variables.

3.3.7.2 Framework of data analysis

Statistical package for social science (SPSS.10) was used to analyse the data. SPSS is the one of the most widely used of statistical software packages. It covers a broad range of statistical procedures that allows summarizing data, determining whether the differences between groups are statistical significant or not. SPSS also contains several tools for analyzing data, including functions for recording data and computing new variable as well as merging and aggregating data files.

Chi-Square Test was applied for testing the hypothesis at 5% level of significance. Data was analyzed with the help of tables, charts and diagram. Statistical technique like percentile was used to analyze the data. Descriptive analysis has been used. Garrett’s Rank technique was conducted to determine the most important factors affecting Mutual Fund investment. Likert’s scale technique was also used for analysis.
3.3.7.3 Method of Analysis

3.3.7.3.1 Chi-Square

Karl Pearson in 1900 developed a non-parametric test for testing the significance of the discrepancy between experimental (observed) frequencies and the theoretical frequencies (expected) obtained under some theory or hypothesis. This test is known as Chi-Square Test ($\chi^2$-test) of goodness of fit, and is used to test whether the discrepancy between expected and observed values may be attributed the chance (fluctuations of sampling) or whether the deviation is really because of the inadequacy of the theory to fit the observed data.

In order to apply the Chi-square test either as a test of goodness of fit or as a test to judge the significance of association between attributes, it is necessary that the observed as well as theoretical or expected frequencies must be grouped in the same way and the theoretical distribution must be adjusted to give the same total frequency as we find in case of observed distribution. $\chi^2$ is then calculated as follows:

$$\chi^2 = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Where

$O_{ij}$ = observed frequency of the cell in $i$th row and $j$th column

$E_{ij}$ = expected frequency of the cell in $i$th and $j$th column

- **Conditions characterizing the $\chi^2$ test**

  The chi-square test can be validly applied if the following conditions are satisfied:

  (i) The observations recorded are collected on a random basis.

  (ii) The sample observations should be independent, i.e., no individual item should be included twice or more in the samples.

  (iii) The total number of observations should be reasonably large, say $N > 50$. 

40
(iv) The data should be expressed in original units for convenience of comparison and the given distribution should never replaced by relative frequencies or proportions.

(v) Small theoretical frequencies should be avoided while calculating $\chi^2$. Small is a relative term. Preferably, each theoretical frequency should be larger than 10, but in any case not less than 5. Since, chi-square distribution is a continuous distribution; it can not maintain its characteristic of continuity, if cell frequency is below less than 5. In that case, we adopt pooling techniques, which consists of adding the frequencies which are less than 5 with the preceding or succeeding frequency (frequencies) to enable the resulting sum to exceed 5 and adjust accordingly for the degree of freedom is adopted.

3.3.7.3.2 Garrett’s ranking technique

To find out the most significant factor which influences the respondent, Garrett’s ranking technique was used. As per this method, respondents have been asked to assign the rank for all factors and the outcome of such ranking have been converted into score value with the help of the following formula:

$$\text{Percent position} = 100 \times \frac{(R_{ij} - 0.5)}{N_j}$$

Where

$R_{ij} =$ Rank given for the $i^{th}$ variable by $j^{th}$ respondents
$N_j =$ Number of variable ranked by $j^{th}$ respondents

With the help of Garrett’s Table, the percent position estimated is converted into scores. Then for each factor, the scores of each individual are added and then total value of scores and mean values of score is calculated. The factors having highest mean value is considered to be the most important factor.
3.3.7.3.3 Likert’s Scale technique

Most frequently used summated scales in the study of social attitudes follow the pattern devised by Likert. For this reason they are often referred to as Likert-type scale. In a Likert scale, the respondent is asked to respond to each of the statements in terms of several degrees, usually five degrees (but at times 3 or 7 may also be used) of agreement or disagreement.

Likert scales are developed by utilizing the item analysis approach wherein a particular item is evaluated on the basis of how well it discriminates between those persons whose total score is high and those whose score is low. Those items or statements that best meet this sort of discrimination test are included in the final instrument.

Thus, summated scales consist of a number of statements which express either a favorable or unfavorable attitude towards the given object to which the respondent is asked to react. The respondent indicates his agreement or disagreement with each statement in the instrument. Each response is given a numerical score, indicating its favourableness or unfavourableness, and the scores are totaled to measure the respondent’s attitude. In other words, the overall score represents the respondent’s position on the continuum of favourable-unfavourableness towards an issue.

Advantages:

The Likert scale has several advantages.

(a) It is relatively easy to construct the Likert-type scale in comparison to Thurstone-type scale because Likert-type scale can be performed without a panel of judges.

(b) Likert scale is considered more reliable because under it respondents answer each statement included in the instrument. As such it also provides more information and data than does the Thurstone-type scale.

(c) Each statement, included in the Likert scale, is given an empirical test for discriminating ability and as such, unlike Thurstone-type scale, the
Likert scale permits the use of statements that are not manifestly related (to have a direct relationship) to the attitude being studied.

(d) Likert scale can easily be used in respondent-centered and stimulus-centered studies i.e., through it we can study how responses differ between people and how responses differ between stimuli.

(e) Likert scale takes much less time to construct; it is frequently used by the student of opinion research.

Limitations of Likert scale:
These are several limitations of Likert scale as well. One important limitation is that, with this scale, we can simply examine whether respondents are more or less favorable to a topic, but we cannot tell how much more or less they are. There is no basis of belief that the five positions indicated on the scale are equally spaced. The interval between ‘strongly agree’ and ‘agree’ may not be equal to the interval between ‘agree’ “and undecided”. This means that Likert scale does not rise to a stature more than that of an ordinal scale.

One further disadvantage is that often the total score of an individual respondent has little clear meaning since a given total score can be secured by a variety of answer patterns. It is unlikely that the respondent can validly reach to a short statement on a printed form in the absence of real-life qualifying situations. Moreover, there “remains a possibility that people may answer according to what they think they should feel rather than how they do feel.

In spite of all the limitations, the Likert-type summated scales are regarded as the most useful in a situation wherein it is possible to compare the respondent’s score with a distribution of scores from some well defined group. They are equally useful when we are concerned with a programme of change or improvement in which case we can use the scales to measure attitudes before and after the programme or change or improvement in order to assess whether our efforts have had the desired effects. We can as well correlate scores on the scale to other measures
without any concern for the absolute value of what is favourable and what is unfavorable. All this accounts for the popularity of Likert scales in social studies relating to measuring of attitudes.

### 3.4 Scope of the study

The present study is an attempt to study the investors’ perception towards mutual fund of three major cities of Gujarat, namely; Surat, Baroda and Ahmedabad. It involves understanding the basic concept of mutual fund, various schemes of mutual fund, investment alternatives, factors influencing investment, investor’s expectation regarding the mutual fund and investors’ preference of different mutual fund schemes.

Similar studies on this line may be conducted in other cities too and for different investment products in India. Further research can also be conducted for studying perceptions of institutional investors towards mutual funds.

### 3.5 Limitations of the study

For the research work, data was collected and interpreted with utmost reliability and consistency but due to prejudices of a few respondents, certain limitations of the study are as follows:

1. The study depicts the present scenario in the selected cities of Gujarat and hence the result may not be applicable to another period of time.
2. The study is limited to 300 respondents of the selected cities of Gujarat.
3. Answer to the questionnaire depends upon the beliefs and prejudices of investors.
4. It is assumed that respondents are true and honest in expressing their views and have filled the questionnaire honestly and without any bias.
5. The present study is restricted to information collected about the Mutual Fund investors with the help of questionnaire.