CHAPTER III

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research Methodology of a study includes, in general, the manner of conducting a statistical survey in such a way that it enable the researcher to reach in to valid inferences and conclusions. It includes the assumptions made and Scope of Enquiry, Objectives of the Study, Need for the Study, Research Methodology, Sources of Data and various statistical methods used in the course of study, which altogether helps interpreting data and reaching to conclusions. Research methodology is a blue print showing where we are and where we want to go and various processes involved therein. It involves a series of actions designed for the accomplishment of the objectives of the survey in the stipulated time limit. It highlights the critical paths through which the researcher moves on without deviating from the basic assumptions for which the survey is instituted.

"According to Bernard S. Philips, "The research design constitutes the blue print of the collection, measure and analysis of data." The definition highlights that research design includes the methods of research, viz. survey, observation, experiment, the content analysis or their combinations. It also includes the types of data (quantitative or qualitative) data to be collected, questionnaire or schedule (structured or unstructured) and also about the size and techniques of sampling.
Different authors have defined the research design differently. According to Claire Selitiz "A research design is the arrangement of the condition for collection and analysis of data in a manner that aims to combine relevance to research purpose with economy in procedure".

According to Paul E. Green and Donald S. Tull, "A research design is the specification of methods and procedures for acquiring the information needed."

Thus, according to the author, the research design is the overall framework of research project and which mentions about the types and sources of information and procedure to be followed in collecting it. All the above definitions point towards the mention of entire work to be done by the researcher from the beginning to the end.

### 3.2 THE PROBLEM

Mutual Fund is one of the financial instruments in capital market, here the study based on the empirical investigation on the investment strategies and performance of Mutual Fund schemes, main purpose of the study is to identify that what are the investment strategies of selected schemes and which schemes provided highest return and minimize the risk. Research need because of the capital market has unexpected volatility and some time reaction is positive and sometimes negative. Good and bad news affects price movement, that needs to identify how much return is provided by market or bench mark. Investors need to keep watch on investment strategies of schemes and identify trade – off return and risk.
The year 2009 had unprecedented global liquidity crisis that led to a share slowdown in growth. The industrial growth index was zero. Time valuations were attractive for investment decision and strategies for active diversification of portfolio. In March 2009 sensex and Nifty down by 37% & 36 % respectively. Mutual fund industry has been affected by stock market movements. Mutual fund increased their stock/ scrip fund holding from 4.1% to 21.2% of the total market capitalization. It had opportunity to research in this field, with focus on competitive structure of the mutual fund industry. Equity diversified fund are directly affected by the stock movements while index, income and balance fund are less affected.

Assets Management Company design fund for particular investors and sectors like information technology, fast moving consumer goods, international financial instruments etc. So mutual fund industry is high competitive and fund manager investment style and research team also affecting risk and return of the funds. An important practical motivation for study of investment strategies of mutual fund and their performance evaluation is to help an investor to decide in which funds to invest.

In these terms, Indian capital market is extremely unanticipated due to political risk, liquidity risk and others factors affecting it. The Indian equity markets rallied smartly ever-increasing on December 2009, it gains by the end of the December month. The Sensex and Nifty fell 2.31 % and 2.85% respectively while mid cap index was down sharply by 10%. February 2009 Global equity markets also fared poorly aimed rising recession, the Dow Jones closing the month down 8.83% and
NASDAQ down 6.38%. Domestic mutual funds were also net sellers of Rs. 864 crore this month. 2009 shows equity market had been high fluctuation during year and Budget 2009 shows high debt fund fiscal policy.

3.2.1 Need for the Study

As per the past research, number of articles and research papers has highlight the performance of mutual fund industry but very few of them have been focused on investment strategies. As we have been seen that research is very essential for this filed because it guides the investors when and how to take decision about which of the financial instrument select for investment. Capital market is not so easy to predict, so many point need to count the predict the capital market like fundamental analysis, efficient market, technical analysis and theory of portfolio management like Markowitz, portfolio optimization, single index model, factor analysis and Sharpe index model.

Here the researcher took many parameters for analysis of performance of mutual fund. It includes Investment Strategies, Investment in Equity, Absolute Returns, Standard Deviation, Beta and Assets Under Management. Further Sharpe performance evaluation model, model represents return on security with risk free return on investment and then take into considering the variance on security.

3.3 HYPOTHESIS OF THE STUDY

In order to fulfill and achieve the above stated objectives of the research the study has been made on the basis of certain hypothesis bifurcated according to the various dimensions of the Indian mutual funds industry. The hypotheses of the study have been made according to the need and importance of the study.
The study has taken into consideration the growth and development of Indian mutual funds industry in to and in term of net resource mobilization related to the Indian mutual funds industry, the investment strategy and performance evaluation of HDFC Mutual fund Schemes and Reliance Mutual Fund Schemes and its diversification as criteria for hypothesis. For testing purpose the following hypotheses have been formulated.

**Hypothesis 1**
The returns of schemes have significant relationship with that ratio invested in equities and schemes invested higher percentage in equity during study period that was crises period, generated low returns as compared to schemes that diverted risk by investing in debt.

**Hypothesis 2**
Performance of the scheme does not have any relationship with that of Fund/scheme Size (AUM).

**Hypothesis 3**
Risk and return have significant relationship and moves in parallel direction.

**Hypothesis 4**
Index returns and scheme returns are significantly related.

**Hypothesis 5**
The investment performance of mutual funds schemes is superior to the relevant benchmark portfolio.

Above Hypothesis would be expected to review with following sub – parameters which are as under.
3.4 RESEARCH DESIGN

The research design is the conceptual framework within which researcher study is conducted and it construct the blue print for collection of data, measurement of data, statistical tools for analysis and analysis of variance. Research design included an outline of what the researcher will do from writing the hypothesis and its operational implication to the final analysis of data.

Decisions regarding what, when, how much, by what means concerning an inquiry or a research study constitute a research design, further more researcher design means 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. Good research design has features like flexible, appropriate, efficient, and economical.

Researcher ensures the minimization of bias and maximization reliability of the evidence collected. Coding should be done carefully to avoid error in coding and for this purpose the reliability of researcher to be believed. Fund managers of the assets management company also do the research to identify the market and would find period to buy, to hold and to sell the scrip. Fund managers having
good research team who continuous make analysis of economic market, fundamental analysis, efficient market and technical analysis of the particular index. Today research team should identify the international financial market and how international financial instruments value could identified. Financial crisis affect market total risk and total return, it indicates how to diversified the portfolio, how to totally remove the unsystematic risk.

Researcher decided proper plan to action and define variable. Researcher specified research processing and analyzing of the data.

3.4.1 Title of the Problem

Title of the problem is 


3.4.2 Objectives of the Study

Which Mutual fund luring investors with innovative schemes to satisfy investor's quest, it has become imperative to study the working of mutual funds in India with reference to strategies opted by fund managers of different AMCs that result in different return for investors. Moreover investors are also required to analyze some key parameters of fund when they are selecting to invest besides looking into the historical returns provided by the fund scheme. To address this issue present study has following objective:

- To give brief idea about Mutual Funds
- To give an idea about the regulations of Mutual Funds
- To explore the recent developments in the Mutual Funds in India
To overview the performance of Mutual Funds in India

To trace the recent issues and challenges of the Indian mutual funds industry.

To evaluate the investment performance of selected mutual funds schemes in terms of risk and return.

To study the investment style and distinguished strategies of mutual funds in India those help a particular AMC to yield superior return than other funds.

To bring out the relationship between investment strategies and performance of the schemes.

To examine the funds sensitivity to the market fluctuations.

To appraise investment performance of mutual funds on risk adjusted the theoretical parameters as suggested by Sharpe.

And finally to come out with suggestions and recommendations for enhancing the growth of Indian mutual funds industry.

### 3.4.3 Sampling Design

#### Universe

The universe of the study consists of the all the assets management companies (AMC), included selected schemes of five star mutual funds under the different objective of the study.

#### Sampling Unit

The sample unit included Open Ended, Equity Schemes Diversification Funds of HDFC Mutual Fund and Reliance Mutual Fund.
Sources List

Sample has been collected through secondary sources. It includes the mutual fund fact sheet, annual reports and magazine the —Mutual Fund Insight and addition to others journals, magazines, articles, books and the publisher and unpublished documents of the mutual funds have been consider in the research.

Sample Period

Sample period is from period April 2008 to March 2013.

Sample Size

Sample size of the study was as below:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Scheme</th>
<th>Aim</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HDFC Equity Fund (Growth)</td>
<td>Open Ended Growth Scheme</td>
</tr>
<tr>
<td>2</td>
<td>HDFC Capital Builder Fund (Growth)</td>
<td>Open Ended Growth Scheme</td>
</tr>
<tr>
<td>3</td>
<td>HDFC Top 200 (Growth)</td>
<td>Open Ended Growth Scheme</td>
</tr>
<tr>
<td>4</td>
<td>HDFC Core &amp; Satellite Fund (Growth)</td>
<td>Open Ended Growth Scheme</td>
</tr>
<tr>
<td>5</td>
<td>HDFC Growth Fund (Growth)</td>
<td>Open Ended Growth Scheme</td>
</tr>
<tr>
<td>6</td>
<td>HDFC Premier Multi-Cap Fund (Growth)</td>
<td>Open Ended Growth Scheme</td>
</tr>
<tr>
<td>7</td>
<td>Reliance Vision Fund (Growth)</td>
<td>Open Ended Equity Growth Scheme</td>
</tr>
<tr>
<td>8</td>
<td>Reliance Top 200 (Growth)</td>
<td>Open Ended Diversified Equity Growth Scheme</td>
</tr>
<tr>
<td>9</td>
<td>Reliance Quant Plus Fund</td>
<td>Open Ended Equity Growth</td>
</tr>
</tbody>
</table>
### 3.4.4 Significance of the Research

Mutual fund is one of the financial instruments play in capital market, after 2002 high growth of mutual fund industry in India. Mutual fund provides more benefit to small investors, who cannot easily play in capital market. Mutual fund pool the money for saving to investment.

Retail investors face a lot of problem in the stock market due to risk factors such as limited resources, lack of professional advice and lack of information and so on. This study proposes to help the individuals to make a wise decision in investing their savings such as whom to buy from and where to buy. The present study certainly will helpful for such persons by increasing their knowledge about mutual funds, their performance, portfolio management and many other useful information. This study will also useful for mutual fund managements, fresh investors, and related persons. The researcher has selected HDFC Mutual Fund and Reliance Mutual Fund for the study. These two companies are managing highest AUM in industry.
3.4.5 Data Type

The Research Study will be completely based on Secondary Data. To gain an overview of the performance trends of the Indian mutual fund industry secondary data can be collected from various sources like, the fact sheets, newspapers, journals, books, periodicals, websites, etc. Secondary data is taken as a basis of analysis in this research.

3.4.6 Data Collection

3.4.7 Financial and Statistical Tools for Measurement

Here the researcher has used following techniques to study the performance of Mutual Funds which are as follows:

Return
Return on a typical investment consists of two components. The basic component is the periodic cash receipts (or income) on the investment, either in the form of interest or dividends. The second component is the change in the price of the asset – commonly called the capital gain or loss. This element of return is the difference between the purchase price and the price at which the asset can be or is sold; therefore, it can be a gain or a loss.

Average
Average means numbers or names, arrays or references that contained numbers. Other words average means number representations of numbers.

Beta
A relative measure of the sensitivity return on security is to change in the broad market index return. Beta measure the systematic risk, it shows how prices of securities respond to the market forces. Beta is calculated by relating the return on a security with return for the market. Market will have 1.0, if the beta is greater than 1 than the stock is said to be very riskier than market risk, beta less than 1 than the stock is said to be not that much riskier as compare to the market risk. Beta involved market risk, and market risk involved political risk, inflation risk, and interest rate risk. It helps to measure the volatility of fund. It shows how
prices of the securities respond to the market forces. It is calculated by relating the return on a security with the return for the market.

Beta is calculated as,

$$\beta = \frac{\text{Covariance} (Rx, Rm)}{\text{Variance} (Rm)}$$

Where, $Rx$ is the return on the portfolio or stock. $Rm$ is the market return or index. Variance is the square of standard deviation.

**Standard deviation**

It is used to measure the variation in individual returns from the average expected return over a certain period. Standard Deviation is used in the concept of risk of a portfolio of investments; higher standard deviation means a greater fluctuation in expected return.

$$\sigma_x = \sqrt{\frac{\sum(X - \bar{X})^2}{N}}$$

Where,

$\sigma^2$ is the Variance of Return, $\sigma$ is the Standard Deviation of Return.

$X$ is the Return for the stock in Period. $N$ is the Number of years.

**Risk**

Risk is neither good nor bad. Risk in holding securities is generally associated with the possibility that realized returns will be less than expected returns. The difference between the required rate of return on mutual fund investment and the risk free return is the risk premium.

**Sharpe’s performance index**
Sharpe index was given by WF Sharpe in 1966, it measures risk premium of a portfolio, relative to the total amount for risk in the portfolio. Sharpe’s performance index gives a single value to be used for the performance ranking of various funds or portfolios. Sharpe Index measures the risk premium of the portfolio relative to the total amount of the risk in the portfolio. This risk premium is the difference between the portfolio’s average rate of return and the risk less rate of return. The standard deviation indicates portfolio the risk. The index assigns the highest values to assets that have best risk adjusted average rate of return.

**Sharpe Index =** \( \text{Portfolio Average Return (Rp)} - \text{Risk Free Rate of Return (Rf)} \)

**Standard Deviations of the Portfolio Return**
A Sharpe ratio indicates the risk premium of portfolio relative to the total amount of risk in the portfolio. Sharpe ratio summarizes. The risk and return of a portfolio in a single measure that categorizes the performance of funds on the risk adjusted basis. The larger the Sharpe ratio, the portfolio is over performing the market and vice – versa.

**Correlation**

In statistics, dependence is any statistical relationship between two random variables or two sets of data. Correlation refers to any of a broad class of statistical relationships involving dependence. Familiar examples of dependent phenomena include the correlation between the physical statures of parents and their offspring, and the correlation between the demand for a product and its
price. Correlations are useful because they can indicate a predictive relationship that can be exploited in practice.

When two sets of data are strongly linked together we say they have a High Correlation.

- Correlation is Positive when the values increase together, and
- Correlation is Negative when one value decreases as the other increases

Correlation can have a value:

- 1 is a perfect positive correlation
- 0 is no correlation (the values don’t seem linked at all)
- -1 is a perfect negative correlation

The value shows how good the correlation is (not how steep the line is), and if it is positive or negative.

\[
 r_{xy} = \frac{\sum_{i=1}^{n} (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n} (x_i - \bar{x})^2 \sum_{i=1}^{n} (y_i - \bar{y})^2}}
\]

Where:

- \( \Sigma \) is Sigma, the symbol for "sum up"
- \( (x_i - \bar{x}) \) is each x-value minus the mean of x (called "a" above)
3.4.8 Period of Study

The present study will cover five years from 1st April 2008 to 31st March 2013. This is the period during which the capital market has shown tremendous volatility.

3.5 LIMITATIONS OF THE STUDY

The limitations of the study are as under –

(1) The study covers only few schemes of HDFC Mutual Fund and Reliance Mutual Fund.

(2) The data, which has been used for this study mainly secondary data, which has been taken from published annual reports and other reports from time to time. The limitation of secondary data remains with it and also applies to this research work.

(3) The researcher is an external evaluator of HDFC Mutual Fund and Reliance Mutual Fund hence the insight view of these is beyond the limitation of researcher.

(4) The research analysis was based on the past performance of the only selected Equity Diversified Schemes, past performance may or may not sustain in future.
(5) Fund manager investment style based on capital market situation. It could not always pursue the mentioned objectives.

(6) Equity Diversified schemes having different objectives due to sector wise allocation of the fund.

(7) Performance measurement techniques should not give equal weight to each of the schemes.

3.6 OPERATIONAL DEFINITIONS AND CONCEPTS

**Mutual Fund**

MF is a fund established in the form of a trust by a sponsor to raise money by the trustee through the sale of units to the public under one or more schemes for investing in securities in accordance with the SEBI regulations.

**Mutual Fund scheme**

It refers to the HDFC and Reliance Mutual Fund products launched representing a category with specific objective and varied options. A scheme can belong to open or close-end type of operation. The objective of the scheme can relate to any category like income, growth, balanced, money market and equity linked savings scheme.

**Open-end Funds**

These are schemes of a mutual fund offering units for sale on a continuous basis directly from the fund and does not specify any duration for redemption or repurchase of units.

**Net Assets Value**
NAV is the current market worth of a mutual fund scheme. Calculated on a daily basis considering total assets and any accrued earnings, after deducting liabilities; the remainder is divided by the number of units outstanding. NAV is considered as the most reliable indicator of mutual fund performance.

**Unit**

It means the share of holding of an investor in a mutual fund scheme. Each unit represents one undivided share in the assets of a scheme.

**Unit-holder**

He/ She is a participant in a mutual fund scheme.

**Growth Schemes**

These schemes invest primarily in shares and also might hold fixed-income securities in a smaller proportion.

**Growth Option**

This option of a mutual fund scheme is an option for long term growth of resources mobilized as it invests primarily in shares with significant growth potential. Dividend is not paid to the investors but ploughed back into the fund increasing the NAV of the units.

**Year**

It refers to the financial year of Government of India starting on April 1 and ending on March 31 of the following year.

### 3.7 CHAPTER SCHEME

This research work is organised into seven chapters as detailed below:
Chapter I highlights the overview and concept of mutual funds, history of mutual fund, classification of mutual fund schemes, structure of mutual funds in India, advantages of mutual funds, disadvantages of mutual funds, risk involved in mutual fund, role of mutual funds in Indian financial market, legal framework of mutual funds in India, opportunities and challenges for mutual fund industry.

Chapter II deals with the comprehensive review of literature comprising of studies in foreign countries as well as in India.

Chapter III focuses on the methodology adopted for the present study covering the data source, sampling technique, tools and techniques of analysis presents the need for the study, statement of the problem, objectives, hypotheses, scope and limitations of the study.

Chapter IV is based on analysis of investment strategies of HDFC Mutual Fund schemes. It covers introduction and overview of HDFC Limited, introduction of selected schemes, investment strategies and investment pattern of selected schemes. The chapter also highlights top holdings of schemes as on 31st March 2013, five year absolute returns and comparison with their benchmark returns.

Chapter V is based on analysis of investment strategies of Reliance Mutual Fund schemes. It covers introduction and overview of Reliance Capital Limited, introduction of selected schemes, investment strategies and investment pattern of selected schemes. The chapter also highlights top holdings of schemes as on 31st March 2013, five year absolute returns and comparison with their benchmark returns.
Chapter VI studies the comparative analysis of selected growth schemes with growth option HDFC and Reliance Mutual fund schemes on the basis of various statistical parameters like comparison on the basis of diversification, comparison on the basis of fund size, risk and return analysis, comparison of fund return and benchmark return, analysis on the basis of Sharpe ratio and results of above analysis.

Chapter VII comprehensively summarizes the entire study and presents conclusion and suggestions. The next chapter is related to the introduction of HDFC Mutual Fund, the strategy of investment opted by fund managers for sampled schemes, absolute returns generated by selected schemes of HDFC Mutual Fund and their empirical analysis.