Chapter 3: Research Methodology

3.1 Introduction

Research can be defined as a scientific process in search of truth about a phenomenon. The process of research includes collection of the data, information and related facts for the advancement of existing knowledge. Research includes the organised efforts conducted for the purpose of finding valid answers to the well-defined research problems. The research process is systematic and scientific in nature and follows a series of stages. It starts with the concept or an idea which have potential to explore in order to expand the level of existing knowledge. It is used to ascertain facts, reaffirm the results of previous work, solve new or existing problems, support theorems, or develop new theories. A research project may also be an expansion on past work in the field. Since there are many aspect of research methodology, the line of action has to be chosen from a variety of alternative. The choice of suitable method can be arrived at through assessment of objectives and comparison of various alternatives.

This chapter describes the problem statement, objectives of the study, research design, type of data and method of data collection, the sampling procedure, the survey procedure utilized, hypothesis to be tested and the various statistical techniques employed in the study.

3.2 Statement of the Problem

The ownership structure of a business organisation plays a significant role in its corporate governance and affects the incentives of managers and in turn the economic efficiency of the business organizations they manage. In case of proprietorships, partnerships or closed corporations; a small and closely related individuals of the same family or cooperating in running a business for lengthy durations runs the organization and shares its profits. However, in the recent century, a new form of business organization flourished as non-concentrated-ownership corporations emerged. The modern diverse ownership organization has broken the link between the ownership and active management of the company. These corporations are run by professional
managers who typically own only a small percentage of the shares, which means, ownership is disperse, that is the corporation is owned by many shareholders and its profits are also distributed among these many stockholders. Modern corporations raise money in the capital markets by way of issuing equity or debt to the general public and assign it to the effective activities of professional managers. That is why it is plausible to hypothesize that the modern diffuse-ownership corporations have the tendency to perform better than the traditional "closely held" entities. The term 'ownership structure' has two broadly applied dimensions: ownership concentration and owner identity. By testing the relationship between financial performance and ownership structure may help the investors to gain value by optimizing the firm's ownership structure.

(Berle and Means, 1932) were the first who bring focus to the idea that with the increased diffuseness of the ownership structure, the firm performance worsens. (Demsetz, 1983) applies a counter argument by noticing that it is not reasonable to guess that the diffused ownership structure dilutes profit maximization target as a guide pertaining to resource allocation and utilization. He argues that huge capital requirement give rise to diffuseness of ownership. These two arguments give rise to the research in the field of ownership to check whether these two influences firm performance or not.

This study tries to investigate whether there is evidence to support the notion that variations across firms in observed ownership structures result in systematic variations in observed firm performance in the context of Indian firms. The study test this hypothesis by assessing the impact of the structure of ownership on firm performance measured by profitability, market valuation and dividend policy of the selected firms using data of BSE 100 Index from 2000-2014.

To conclude, if a company performs well, both the promoters and non-promoters may be persuaded to hold the larger part of shares and further increase their holding, which in turn must have some kind of influence on firm performance. Hence, the problem statement of the present study can be stated as

“To study the ownership structure of Indian firms and to analyse the impact of Indian corporate firms ownership structure (BSE 100 Index) on the firm’s performance and shareholder’s wealth creation”

The above mentioned research problem is studied with the help of following objectives.
3.3 Objectives of the Study

The main objective of the research study is “To study the ownership structure of Indian firms and to analyse the impact of Indian Corporate Firm’s ownership structure (BSE 100 Index) on the firm’s performance and shareholder’s wealth creation”. In addition to the main objective of the research study, the research study attempts to identify various sub-objectives of the study stated as follows:

Objective 1: To analyse the impact of Firm’s Ownership Structure on firm’s Profitability (Earning per share, Return on Investment and Profit after Tax)

Objective 2: To analyse the impact of Ownership Structure on the firm’s Market valuation (Market Capitalization, PB Value and P/E ratio) of the firm.

Objective 3: To analyse the impact of Ownership Structure on Dividend Policy of the firm (Dividend pay-out Ratio).

Objective 4: To analyse the trend in Ownership Structure of the selected firms (BSE 100 Index) in India.

3.4 Hypotheses Tested in the Study

On the basis of defined objectives, the following hypotheses are tested in the research study:

$H_{01}$: There is no impact of ownership structure on firm performance.

$H_{11}$: There exists significant impact of ownership structure on firm’s performance.

$H_{02}$: There is no impact of ownership structure on profitability of the firm.

$H_{21}$: There exists significant impact of ownership structure on profitability of the firm.

$H_{03}$: There is no impact of ownership structure on the market valuation of the firm.

$H_{31}$: There exists significant impact of ownership structure on the market valuation of the firm.
\[ H_{04}: \text{There is no impact of ownership structure on dividend pay-out ratio.} \]
\[ H_{4}: \text{There exists significant impact of ownership structure on dividend pay-out ratio.} \]

3.5 Research Design

The research design of the study is *descriptive as well as causal research*. Research design in general can be explained as a detailed outline of how an investigation will take place in the study. The research design is a detailed plan which guides the methods and procedures for collecting and analysing the required information. A self-explained research design includes the method of data collection, what instruments will be employed, how the instruments will be used and the intended means for analysing data collected. The chosen research design is based on collection of secondary data of ownership structure, firm’s performance and shareholder’s wealth in case of selected firms.

3.6 Sampling Frame

Sampling frame can be defined as a list of elements from which a sample may be drawn. Sampling frame of the study can be explained with the help of defining population in the study, target population and sample unit in the study. In the study the population includes all the business organisations, the target population includes the listed firms in Indian stock exchange, and the sample unit are the companies included in BSE 100 Index formed in Bombay Stock Exchange in India.

3.7 Type of Data and Data Collection

The data used in this study is secondary in nature. The *secondary data* in the research study is collected from the professional data sources Capitaline and Prowess. The time series annual data of the selected variables (as mentioned below in section 3.9) are collected from the secondary sources for the period from 2000 up to 2014.

3.8 Data Analysis and Methods

As data means raw information collected from sundry sources. This raw information needs filtrations in order to convert into relevant information having been compiled,
edited and coded i.e. it has to pass through a process of analysis and has to be interpreted accordingly before their meaning and implications are understood. Various statistical techniques are to be used for testing the hypothesis and drawing the inferences and conclusions about the relationship. In the research study following statistical methods is applied:

3.8.1 Descriptive analysis: In the research study the secondary data of different variables related to Ownership structure and firm performance in the Index BSE-100 in Indian stock market. The data is collected from the different sources as mentioned in above sections. The descriptive analysis of the variables is done and represented. In descriptive analysis of the variables, the measure of central tendency (mean, median), distribution, minimum and maximum values are estimated.

3.8.2 Trend analysis: A time series may have long term trend (increasing or decreasing). The movement of a time series variable in one direction with time is known as trend. The trend is a long term concept and cannot be identified in short duration of time. In the research study, the long term trend is analysed of the selected variables related Ownership structure, firm’s performance, Profitability, Dividend policy and market capitalisation of the companies in the Index BSE-100 in Indian stock market. If \( y_t \) is a time series variable, the presence of a long-term trend in the series can be analysed with the help of following model

\[
Y_t = \alpha + \beta \times \text{Time} + \epsilon_t
\]

Where, ‘Time’ is the time variable. The slope coefficient (beta) of the regression model represents the long term trend in the series. If the p value of t statistic is less than five percent level of significance, it indicates the presence of a statistically significant long term trend in the time series.

3.8.3 Growth rate estimation: In the research study the growth rate in the behaviour of selected variables is estimated with the help of semi-log model.
The exponential annualized growth rate of a series can be estimated with the help of following model:

\[ \log(Y)_t = \alpha + \beta \times Time + \epsilon_t \]

Where, ‘Time’ is time variable in years. The slope coefficient (beta) of the regression model represents the value of the growth rate of the time-series variable. If the p value of t statistic is less than five percent level of significance, it indicates that the growth rate of the time series variable is statistically significant.

### 3.8.4 Panel data regression model:

Panel data is data that involves measurements of many individual units over a period of time, i.e., the same cross-sectional unit is surveyed over time. In short, panel data has the *space* and *time* dimensions. In the study the time series data of different variables related to ownership structure, firm’s performance, profitability, market valuation, dividend policy of the companies in the Index BSE-100 in Indian stock market *is selected for 15 years*. Hence the nature of the data is panel. In order to analyse the panel data, the fixed and random effect model is applied in the study. The panel data regression model can be represented as:

\[ Y_{it} = \beta_1 + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots \beta_k X_{kit} + u_{it} \]

The subscript *i* indicate the cross-sections considered in the study and *t* represents the time series behaviour of the variables. The choice of fixed effect model and random effect model depends on the results of f test as well as Hausman test.

### 3.9 Variables used in the study

Variables used in the study have been already discussed in chapter 2 section 2.4. Variables considered in the study for ownership structure are
• Promoters holding,
• Non-promoters holding,
• Non-promoters institutional holding, and
• Non-promoters non-institutional holding

While as variables considered to measure firm performance have been categorised in four headings such as

• To measure performance through profitability, variables used are earning per share (EPS), return on investment (ROI) and profit after tax (PAT).
• To measure performance through market valuation, variables used are market capitalisation, price earnings ratio (P/E Ratio), price to book value (P/B Ratio).
• To measure performance through dividend policy, variables used are dividend pay-out ratio (DP ratio).
• To analyse the ownership structure of firms’ time series data of firms selected is used.

3.10 Variables Defined

Variables used in this study are of two types; ownership structure as an independent variable and firm performance as dependent variable.

3.10.1 Ownership Structure Measures:

Promoters Holding

Promoters are the entities that started company and most of the times have seats on Board of Directors or the Management. Family members of the promoters who have shares on their name are also categorized as this class and are termed the Promoter Group. Promoter holdings show the extent of control promoters have over running of the business enterprise. A more diversified holding and a high existence of Institutional investors indicates that promoters have little authority to make and perform decisions that benefit them without determining how it would affect earning and other shareholders. Holdings into various categories provide an insight into control of the company, favour the stock holds with the market players and entities that are having
high shares in the company, changes in whose holdings, is any, will have an impact on stock price.

**Non Promoters Holding**

Shareholders other than promoters are known as public shareholders. Public shareholding includes institutional and non-institutional investors.

**Non-Promoters Institutional Holding**

Institutional investors are the pension funds, money managers, mutual funds, insurance firms, investment banking institutions and commercial trusts. They buy large number of shares which have a high impact on the stock market's movements. They are believed to be more knowledgeable and experienced. Hence, they are generally followed by small investors.

An institutional investor is a nonbank person or firm that trades securities in large share quantities that it is given preferential treatment and lower commissions. Institutional investors face fewer protective regulations as it is assumed they are proficient and are in a position to protect them. Institutional investor also invests on behalf of its members. For example endowment funds, commercial banks, mutual and hedge funds. Institutional investors contain the resources and professional knowledge for thoroughly researching a number of investment options not available to retail investors. Because institutions are the major force behind supply and demand in securities markets, they perform nearly all trades on major exchanges and greatly have an impact on the prices of securities. For the same reason, retail investors often research about institutional investors' Securities and Exchange Commission (SEC) filings to ascertain which securities the retail investors should buy.

**Non-Promoters Non Institutional Holding**

Non institutional investors are those who bring their investment funds through an agent, bank, and real estate agent and so on. They are also called retail investors. A retail investor is individual investors who buy and sell securities for his or her personal account rather than for another company or organization. They are usually common people or organizations managing money independently. Non-institutional investors are, by definition, any investors that are not institutional. That's just about everyone who
buys and sells debt, equity or other investment funds through a broker, bank, real estate agent. These are the people or organizations that their own money, usually to save for retirement or even to save for a sizable purchase. Retail investors pay brokerage firm fees along with marketing and distribution costs for each and every trade. Retail investors buy in much smaller quantities than larger institutional investors.

3.10.2 Firm Performance Measures:

**Earnings per Share**

Earnings per share (EPS) is the monetary value of income per outstanding share of common stock for a business corporation. The shares are usually purchased to earn dividend or sell them at an increased price in future. EPS amount is vital for potential common stockholders because the dividend and value maximization of stock in future generally depends on the earnings of the company. EPS is the most extensively quoted and relied measure of profitability by investors. EPS is reported by almost all the public companies in the world on the income statements. The higher the EPS higher would be the profitability for shareholder. Companies having higher EPS are preferred by the investors in the business world. Investors want to invest in the firms with high earning potential. Earning potential of the firms is realized by the EPS of a company.

**Return on Investment**

Return on investment (ROI) is profit to the investor from an investment. A performance measure used to check the efficiency of an investment or even to compare the efficiency of a variety of investments. ROI measures the returns on an investment compared to the investment's cost. To determine ROI, the return of an investment is divided by the cost of the investment, and the result is indicated as a ratio or a percentage. A higher ROI means the investment benefits favourably to investment cost. Being a performance measure, ROI can be used to assess the efficiency of an investment or to compare the efficiency of different investments. In business, the goal of the ROI metric is to evaluate, per period, rates of return back on money invested in an economic entity to be able to decide if it is good to hold on to certain investment. Additionally it is used a signal to compare different project investments within stock portfolio. The project with best ROI is given priority.
**Profit after Tax**

Profit is an income allocated to the owner in a profitable market process (business). Profit is a way of measuring profitability which is the owner's major objective in profit formation process of market. The net amount acquired by the business in the end after tax deduction is profit. The profit after tax is always an improved assessment of what a business actually is earning and therefore can use in its business than its total revenues. Profit is the first and foremost figure at which the financial position of business is ascertained. If there is any untoward incident occurred in the business profit gets affected at first place. Profit is always related to the good business plans.

**Market Capitalisation**

Market capitalization is the total market value of all of the company's outstanding shares. Market capitalization is determined by multiplying a company's shares outstanding by the current market price of one share. Capitalization could be used as a proxy for the public opinion of a company's net value and is also considered a determining element in some types of stock valuation as outstanding stock is purchased and sold in public markets. The investment analysts use this number to ascertain a company's size, instead of sales or total asset numbers. Market capitalization shows the theoretical cost of buying all of a company's shares, but usually is not what the company could be purchased for in a standard merger deal.

**Price-to-book value**

Price-to-book value (P/B) is an essential aspect influencing the ownership structure of firms. Price-to-book value (P/B) is the ratio of market price of a company's shares over its book value of equity. The book value of equity, subsequently, is the worth of a company's assets shown on the balance sheet. For investors, P/B remains a proven method for finding low-priced shares that have been neglected by the market.

**Price Earnings Ratio**

The price-earnings ratio (P/E ratio) is the ratio for valuing a company that measures its current share price in relation to its earnings per-share. Essentially, the price-earnings ratio indicates the dollar amount a shareholder can expect to invest in a company to be able to get one dollar of that company's earnings. That is why the P/E may also be
known as the multiple since it shows how much shareholders are prepared to pay per dollar of earnings. In general, a higher P/E shows that investors expect higher earnings growth in the foreseeable future in comparison to companies with a lesser P/E.

**Dividend pay-out Ratio**

The dividend pay-out ratio is the proportion of earnings paid to shareholders in the form of dividends. The dividend pay-out ratio provides an insight into the company dividend policy by way of assessing how much money a firm is giving to shareholders, and how much earnings it is keeping with the business to reinvest in expansion, pay off debt or increase cash reserves. This last mentioned portion is recognized as retained earnings. Shareholders seeking high current income and limited capital growth choose companies with high Dividend pay-out ratio. However shareholders who favour capital growth may choose lower pay-out ratio because capital gains are taxed at a lesser rate. In early life of high growth companies, low or zero pay-out ratios are preferred.

**3.11 Statistical Tools**

In the research study, MS Excel, SPSS, STATA and E-Views 8 are used for the purpose of data analysis. MS Excel is a spread sheet developed by Microsoft for easy calculations, graph making and other various uses. SPSS (Statistical Package for Social Sciences) from IBM is predictive analytical software offers advanced techniques for easy calculations, graphical representations, improved efficiency and minimizing risks. STATA is a general purpose statistical analysis package created by Stata Corp LP. Its usage includes a broad range of statistical analyses, plus data management, graphics, simulations, and custom programming. E-Views (Econometric Views used mainly for time-series oriented econometric analysis. It is developed by Quantitative Micro Software (QMS). E-Views can be used for general statistical analysis and econometric analyses, such as panel data analysis, cross-section and time series estimation and forecasting.