Productivity measures the efficiency with which resources as a whole - (capital as well as manpower) are employed in production. It measures a major factor in determination of labour requirement and thus of employment. Productivity in simple words means efficiency in production. Productivity should transform the various factors of production 'as they are' into 'what they have the optimum capacity to become'.

Measurement of productivity as is the case with measurement in any other fields, provides information as to the level attained, rate of growth, utilisation of resources and consequently pinpoints the critical areas and factors which impede productivity at various levels - plants, industry and global. It also permits comparisons at various levels. Productivity measurement thus forms a basis for planning, evaluating and taking appropriate measures for improving productivity at various levels, contributing to more rapid economic growth.

The overall productivity of industry or any other sectors would be of great interest in the general economic analysis. Production functions are also of extreme importance for the theory of economic growth and investigations into the rate of technical progress.
This study is divided into eleven chapters. The detailing of the work done through these chapters is described briefly as under:

Chapter-I introduces the broad spectrum of the studies made in the areas of productivity growth and production functions. A brief outline of the historical background as well as the review of literature is mentioned in this chapter, so that the material presented here provides the general view of the research work which is carried out day-by-day.

Chapter-II contains the basic concepts, definitions, data base and other related information relating to the present study in the form of industrial profile. A general outline is indicated for the overall industrial growth in the industrial sectors of Gujarat State as well as All India as a whole.

Chapter-III contains the productivity analysis for the industrial sectors of Gujarat State as compared to All India. In this study, factor productivity ratios are computed and a comparative relative partial productivity measure is also defined and analysed. Similarly, capital-output co-efficients and their relative measures are also computed and the results are interpreted.
Chapter-IV contains the analysis based upon the wage pattern for the industrial sector of the economy at state and national levels. It also analyses the wage rate as well as the share of wages per unit of total productive capital employed.

A more comprehensive measure of total factor productivity (TFP) based upon Kendrick's concept has been brought out in Chapter-V for the industrial sector of the state and the national economy. An attempt is also made to fit a mathematical trend curve for TFP measures from which results are interpreted and compared. Some projections are also carried out which may be useful for forecasting the overall productivity performance during the next coming years in the industrial sectors of Gujarat and India.

Chapter-VI develops a multiple regression model to explain money earning in terms of the consumer price, Labour productivity, capital-output ratio, employment and degree of unionism indices. The model is tested and interpreted for both the sectors and further predictions are obtained on the basis of these projections.

In chapter VII, Cobb-Douglas production function with economies of scale and technical change is estimated for the industrial sectors of state and national economies. Here the regression models are fitted with and without technical progress.
In chapter-VIII, a linear programming formulation is developed for the optimum resource allocation in the industrial sectors at both state and national levels. This analysis is carried out under certain assumptions regarding the constraints mentioned. The graphical solution leads to the determination of the optimum values of the input factors of the production. On the basis of the solution obtained, a comprehensive total and partial sensitivity analysis is carried out.

Chapter-IX discusses the case of CES production function with and without neutral technical change. The fitted model for both the Industrial sectors is interpreted and some projections are obtained.

Chapter-X opens a new era of studies in the field of production function which is the case of VES production function. Here a brief methodological aspect is mentioned to develop a class of VES production function which may be applied suitably in different areas of applications.

Chapter-XI considers the problem of fitting VES production function with and without technical change for both the sectors of the economy. On the basis of the entire study carried out through the different production function models for both the industrial sectors, some broad conclusions are given as to the suitability of the appropriateness of the fitted models for both the industrial sectors.