CHAPTER I

INTRODUCTION

I

India suffers from under development. This state of the economy is evident from various economic and social indicators. Agriculture is the major sector in the economy. Even though its contribution to the national income is on the decline, still its share is in excessively high proportion, particularly when compared to world average and that of advanced nations. Wide spread industrialization is considered as the only recourse to this state of the economy for a faster development.

Mahatma Gandhi, in the early years of this centuary described "Spinning wheel as panacea" for the growing pauperism in India, with this started the emphasis on local skills and traditional industry had their second birth. Gandhian thinking has continued to be influential to this day and is well reflected in governmental policy towards small scale and traditional industry. At the same time, India became notable in the 1950's for its insistence on the value of capital intensive heavy industry and modern small scale industry have gained in importance.

Large scale industry in spite of the advantage of economies of large scale operation viz, economies in production, management financial, administration and marketing is heavily dependent on scarce, factor i.e. capital. It is observed to foster monopolistic, oligopolistic market structures, resulting

in bad market performance. It acts as a barriers to the entry of small industry which is held to promote competitive market structure and good market performance.

The small industry is a universal phenomenon and is found to survive even in developed countries where large industry is triumphant. A number of economic, political and psychological factors are attributed to their success. Almost all developed countries have been having, for a long time, special programmers of assistance by the state for the small sector. The main arguments advanced for favouring small scale enterprise in developed countries is that their allocative efficiency is supposedly higher from a social point of view because they face lower wage and higher capital costs than larger enterprises and because this reflects the social cost of labour and capital. Various dynamic arguments such as that small firms are more innovative and that they constitute a seed bed[1] or nursery[2] for entrepreneurs are put forward. In India too, small industry occupies a significant place as in the advanced countries of the world. The role perceived for small scale industries and the nature of industries it refers to has been changing over time but the importance that is attached to developed process remains.

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1. The seed-bed argument has been well put by the Boltan Committee, 1971 : Bolton Committee Report : Small Firms; CMND 4811, London; Her Majesty's Stationary Office.

2. A similar argument was put forward by Marshall. "The small firms form an essential part of the forest of firms whose component trees are decaying as well as growing". Marshall. A, 1920 : Principles of Economics, 8th (ed.) London, Mac Millian.

Since the beginning of the planning era, in India, the promotion of small enterprises in certain range of modern manufactures and the preservation of traditional industries have been important objectives of development policy. Even the heavy industrialization strategy of Mahalnobis also clearly demarcated manufacture of consumer goods and components and sub - assemblies in machinery manufacture for small scale production. The primary concern for this was efficiency of production and creation of employment opportunities.

Economists are concerned with the functioning and performance of the economy, they are equally concerned with the performance of individual units. The theory of firm analyses the behaviour of firm in the market. The relationship between the organization its objectives and management is of paramount importance. The human and material resources have to be consistent with the objectives and requirements of the concern. The objectives and policy is therefore an integral part of the process of management and a necessary function in every organization.

In the real world situation, small firms face competition not only from within the same sector, but also from large scale industries and from imports. Therefore, if the small scale units have to survive in the market, they have to be cost conscious. A firm at a point of time has certain objectives so as to enable it to survive and attain growth in the market. In actual practice a firm is constantly adapting itself to rapidly changing world.

Hence its objectives too change depending upon the situations it face.

A major objective of an enterprise is related to the input conversion – output – cycle. In order to achieve its objectives and satisfy its goals the enterprise take input from the economic environment, through a series of activities transforms or converts these inputs into output and returns them to the economic environment as inputs to the other systems. The enterprise operates within a dynamic setting and success in achieving its goals will be influenced by multiplicity of interactions with the economy.

There exists technological interdependence among firms. This interdependence of activities is found to lead to clustering of industries in certain regions. These enterprises possess enough flexibility so as to serve the objective of regional dispersal and at the same time are bound by technological interdependence. The locational requirement of these firms are found to vary with specific products.

An industry attains growth, when the firms in the industry are growing. A straight forward reference to growth is made in Marshall's analysis of representative firm. Marshall compared the life of a firm with that of a living organism as such it was supposed to pass through the various stages of the life cycle till it declined and disappeared all together from the scene. However in market process one comes across large joint stock

companies which often stagnate but seldom die. On the other hand small scale enterprises exhibit high mortality and low survival rates.

In the process of rapid growth of the relatively efficient firms, the other firms will be recognizing their relatives inefficiency and declining market share in the industry. With long run in view the relatively inefficient in firms are compelled to initiate innovation in their processes and/or products for reversing the efficiency differentials.

It is widely believed that there is no relationship between the size of the firm and the mean growth rates of the firm.[3] The statistical underpinning of the most studies that have led to this conjecture is known as Gibrat's law, also referred to as the law of proportionate effect.[4] Gibrat's law states that the probability of a given firm growing at certain percent is independent of the size of the firm. That is, the probability of a large firms growing at a mean rate of 'X' percent per year is no way different from probability of a small firms growing at the same rate during the time period. Gibrat's law also implies that

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3. See (i) Herbert Simon and C.P.Bonini, "The size Distribution of Business firms", American Economic Review, 48 (September, 1958), 607-17.

(ii) Stephen Hymer and Peter Pashigian, "Firm Size and Rate of Growth", Journal of Political Economy, 70 (December, 1962), 556-69.

4. Gibrats law originally brought to the attention of English speaking economists by Michal Kalecki, "On the Gibrat Distribution", Econometrica, 13 (April, 1945), 161-70; the law has been ably dissected and explained by P.E.Hart, "The size and Growth of firms", Economica, 29 (Februrary, 1962), 29-39.

the variance of growth rates of various size classes of firms should be equal, although this implication is not crucial to the prediction relating to the firms size and mean firm growth rates.

Traditionally, the theory of firm emphasize the objective of profit maximization of a firms. Criticisms of the traditionally postulated objective of the firms, emphasizes that firms may have objectives other than profit maximization, such as steadiness of profit or a certain rate of profit or a certain share of the market or good labour and the public relations. Finally survival or growth may be dominant objective of the firm rather than profit maximization. Not that profits do not matter but other objectives may be regarded by management as a better criteria of progress of firm.

Production functions in defined as the technological inter link between factor inputs and outputs. Factors of production are substituted for each other in productive process so as the maximize the returns. The factor substitutability varies with the nature of the Industry.

Any firm in a position to reap further economies of scale will find it profitable to grow in size. However, the growth in case of a firm is an organic other than machanical phenomenon. the growth of a firm depends not only on its rate of investment but also on the capacity of human and organizational resources; of the firms, its adaption and adjustment to changes in scale of operation and to new environment. The managerial constraints in

expansion of a firm are well accepted in economic analysis. Even in case of increasing return to scale the firm cannot expand very rapidly[5] because entrepreneur cannot go in for too rapid an expansion of his firm because his enterprise in a delicate organism, with complicated labour relations and managerial relations. Survival and growth of firms in competitive market speak of their over all performance.

II

There are numerous studies on small scale industries, but none have been devoted to chemical industry. The chemical industry in India is concentrated in few pockets and the small and medium enterprises in the industry are clustered around the large scale units and located in urban centres. Baroda is one such centre where there is concentration of chemical units of all sizes.

The present study attempts to analyse some of the aspects discussed above. It examines the various hypotheses relating to the entrepreneur and enterprise. Size and capital intensity returns to scale, performance and growth of the enterprises and linkages exhibited by the small and medium chemical enterprises. All these can briefly be discussed.

As the growth of enterprises is a primary requirement for the growth of an economy, the type of entrepreneurship is an

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5. Harrod R.F.; "Economic Essays", Mac Millan & Co. London, 1952, p.185.

equally important factor for the performance of the enterprise. An enterprise is a delicate organization with complicated relations. If it has to survive and grow in the market the efficient use of the human and organizational resources are of paramount importance. In case of small industries, it is the entrepreneur who is the main source of inspiration the performance of enterprises can be attributed to certain characters of the entrepreneurs. Various studies have indicated that persons from mercantile class are successful entrepreneurs and the educational and technical background of the entrepreneurs have positive impact on the performance of enterprises. The characteristics of entrepreneurs such as family back ground, business back ground are expected to lead to better performance by the enterprises. The present study intends to examine the influence of entrepreneurial characters individually and collectively on the performance of enterprises. The performance is measured by value added profit rate and gross value added per man day of labour in the enterprises. The entrepreneurial characters taken into consideration for analysis are : age of the entrepreneur, technical background, business background, and migration. In addition to these, certain characteristics of the enterprises are also included. These are : age of the concern, horse power connected, capital employed, number of partners and capital intensity. Some of the characteristics taken are of qualitative nature, hence represented as dummy variables. Multiple regression analysis has been used to measure and test the influence of these factors on the performance of enterprises.

Each character individually has also been analysed to test its impact on the performance.

The linkage concept is commonly understood and defined in the theory of economic development as one tracing the inter - dependent activities and the extent of these relationship between those inter-dependent activities. In the industrial literature linkage means a phenomenon which occurs among different industrial units, primarily located in one region. Actually it is an internal functional link between one firm to another based on input - output model, common labour pool, capital link, technological link etc. The studies on linkages have largely concentrated on aggregated inter industry studies and regional level studies. Linkage aspects of small scale enterprises have drawn little attention of economists. Even the little work that has been done on small industry largely pertain to their links to urban centres and large scale industries.

Close and powerful backward and forward linkages of two types are emphasized in literature on small scale industry. Firstly, the dependence of small units on large producers. Secondly, location of these channels in big cities. The relation between small and large units is not always competitive, instead small and large units can support each other through mutual buying and selling. The small industry linkages to the big cities depends upon the nature of the products produced. It can be expected that the small industries show stronger backward linkages with larger enterprises and urban centres than forward

linkages. The present study intends to examine these aspect in addition to their inter industry links and links to various regions, taking sales and purchases of the small enterprises to various regions and to various customers.

Few studies have analysed the growth patterns of industries in India. However the growth of small scale industries has been a neglected area for a long. This is largely due to non availability of data on systematic lines. There is no secondary source giving information on small scale enterprises on continual basis. Where do the small enterprises stand so far as their survival and growth is concerned. It is generally observed that small enterprises have to face greater risks and are expected to exhibit higher mortality. As far as the growth of the firms is concerned. Small enterprises have equal chance of growth on an average in comparison with larger firms, but these small firms exhibit higher dispersion.

An industry attain overall growth, when the firms in the industry are growing. Some empirical works suggest that there is no difference between the average growth rates of different sized firms. However, if diseconomies of scale are in operation, expansion of firm beyond a certain size will lead to higher cost and lower profit. This leads one to conclude that larger firms grow slowly than small firms. On the other hand, if there exists economies of scale, the average cost of the larger firms is low and also their profit margin is high. In this situation if small firms have to survive in the market, expansion is a must, as with

the expansion of firms realize economies of scale leading to lower costs and higher profits. The present study intends to examine the growth rates of firms of different sizes and estimates the dispersion of growth rates for different sizes. It is expected that the dispersion of grwoth rates will be higher for small firms than large firms. The mortality rates are estimated for small scale enterprises using secondary data.

It is a general belief that small scale enterprises are less capital intensive than larger enterprises. Capital intensity is measured by the ratio of capital to gross value added or capital employed per labour. In a capital scarce economy small scale enterprises are encouraged due to their capital saving nature and labour absorbing character. Some of the studies conduced in India have revealed that small enterprises are often more capital intensive and not capital saving. The empirical evidence suggest conflicting results, the studies by Dhar-Lydall[6] Hajar[7] and Sandesera[8] suggest the small of the firms are more capital using. These results are against the popular belief that

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6. Dhar, P.N and Lydall, H.F. "The role of Small Enterprises in Indian Economic Development", Asia Publishing House. Delhi, 1961.

7. Hajra, S. "Firm Size and Efficiency in Manufacturing", The Economic Weekly, Aug., 1965.

8. Sandesara, J.C. "Scale and Technology in Indian Industry", Bulletin of the Oxford University Institute of Economics and Statistics, 1966, 28, pp. 181 - 198.

   ----"Size and Capital Intensity in Manufacturing Industry", Vora & Co. Bombay, 1969.

small enterprises are labour absorbing.[9] The study by Mehta concludes that small enterprises are less capital using and capital intensity increase with size.

The present study intends to examine the capital intensity and size relationship. The size of the industry is denoted by capital invested and labour employed. The capital comprises fixed assets and inventories only. The value of fixed capital is adjusted so as to represent at current prices. Inventories which are available at current prices are added to value of fixed assets to arrive at total value of capital at current prices.

It would be interesting to examine the hypothesis related to returns to scale. Where does the group of small scale units stand with regard to this particular aspect, i.e. returns to scale. Few studies on small scale enterprises have fitted Cobb - Douglas production function but none appears to have tested for returns to scale.

The laws of production describe the technically possible ways of increasing the level of production. The technical relation between factor inputs and outputs is denoted by production function. When the returns to scale indicated by the production function is favorable, it is profitable for the firm to expand production. Cobb - Douglas production function is the most widely used production function. According to it, if the

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9. Mehta, B.V. "Size and Capital Intensity in Indian Industry" Bulletin of the Oxford University Institute of Economics and Statistics, 1969, 31, pp. 189 - 204.

sum of elasticities is greater than unity, the industry is said to be facing increasing returns to scale and if the sum of elasticities is less than unity the industry is said to be facing decreasing returns to scale. Here the present study estimates the returns to scale for different groups in chemical industry using Cobb - Douglas production function and test for the returns to scale[10]. The details about the concepts and measurement of the factor inputs are discussed in the chapter on size, capital intensity and productivity. The factor inputs taken are capital, labour and raw material. Capital is defined as the sum of inventories and gross value of fixed assets as noted earlier adjusted at current prices. Labour is represented by man days of labour employed. The output is represented by gross value of production during the year of study.

III

To examine the above relations, various sources of data for Baroda were considered. Baroda is industrially very fast growing region situated in Central Gujarat. Among various industries coming up in and around Baroda, chemical industry has occupied a very important place, playing a very leading role in the growth of the region. The chemical industry contributes to 22 percent of the industrial employment of Baroda district and is the largest industry in the region. The present study therefore, has made an

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10. Tintner Gerald, "A note of the determination of production function from farm records", Econometrica, 1944; Vol. 12, pp. 26 - 34.

effort to examine this industry in Baroda region. The study is a micro - level and is based upon the information collected from small and medium scale chemical units in Baroda region.

Three important sources of information pertaining to industrial units of the region were considered. They are the (1) Inspector of factories, (2) District Industrial Centre, Electricity divisions of Gujarat and (3) Baroda Municipal Corporation. Data pertaining to industrial enterprises registered with all the three sources were collected. By the end of 1984, there were 1384 working factories, registered with inspector of factories; 3528 industrial units registered units with District Industrial Centre, Baroda. These two sources do not give exhaustive list of firms as the first source cover only the factories (industrial units employing more than 10 workers when using power and more than 20 when not using power) and the second source cover only the small enterprises (with investment in plant and machinery up to Rs.35 lacks) and the registration of units is not compulsory. Though these sources were not used for drawing the sample, the data collected was supplemented where the data from the third source was not forth coming. The total registration with electricity divisions of Gujarat and Baroda Municipal Corporation in Baroda region was 6959 by 1984 end. All electrified units are registered with either Gujarat Electricity Board or electricity Division of Baroda Municipal corporation and hence a complete census of such units is possible. This source covers different sizes of enterprises, the industries which were not registered

with the earlier two sources were found to be registered with this source. Therefore,this has been the main source of data used in the study. For detailed analysis sample is drawn for the total population of these units.

Over and above the data collected from above agencies, a field survey on a sample basis was also conducted, so at to make a detailed enquiry of those units. Industrial units registered with electricity departments were considered as the population, based on which sample was drawn. As chemical industry is a modern industry it is expected that even the smallest units use electricity as a source of power. However, the negligible fraction of units in this industry not using electricity as a source of power are not covered by this sample. The electrified units are classified as low tension when having power connection less than 100 Horse Power (HP) and high tension when having power connection greater than 100 H.P. By the end of 1984 there were 23 high tension and 512 low tension chemical units located in Baroda region.

The chemical industrial units were divided into seven groups comprising (i) Inorganic Chemicals (ii) Organic Chemicals (iii) Fertilizers and Pesticides (iv) Dyes and Paints (v) Drugs and Pharmaceuticals (vi) Soap and Cosmetics (vii) Other Chemicals. It was decided to take 20 per cent of units for detailed investigation. The number of units varied from 47 to 103 in the above industrial groups in low tension units. Considering the percentage, the size of the sample units (less than 100 H.P.)

worked out as 102 units. For the sake of comparison 10 out of 23 units of large size (more than 100 HP) were also taken up for detailed investigation. The sample was drawn on random basis according to H.P. and industrial group. Ultimately detailed information could be collected from 95 units below 100 H.P. and 10 units above 100 H.P. All industrial units were personally visited by the present author and the data pertains to the accounting year 1984-1985. An attempt has also been made to collect information for earlier years where ever possible. Questionnaire for collecting information from the firms is presented in Appendix 1.

In the light of above discussion and hypotheses formulated the analysis is carried on in the chapters which follow. The chapter scheme is as follows :

Chapter two is devoted to the analysis of Industrial structure of Gujarat. The place of Gujarat in Industrial map of India and its changing position has been analysed. The inter district and intra-district variation of this sector is analysed in this chapter.

Chapter three examines various aspects of the entrepreneur and the enterprise. In this chapter an attempts is made to study the impact of various entrepreneurial characteristics on the performance of the enterprises. In addition to various simple economic tools, multiple regression is resorted to confirm the results.

Chapter four is devoted to the mortality survival and growth performance of enterprises. For estimating the mortality and survival rates the secondary data is made use of. For analysing the growth performance of surveyed units, the indicators of size used are capital invested, employment and scales. The growth of firms by size, age and industrial group are analysed.

The performance of the enterprise depend to a great extent on the capital structure and productivity. The efficient use of factor inputs and material inputs improve the productivity of the plant. chapter five examines these aspects in detail.

Chapter six provides the mirror view of preliminary linkage pattern of the small enterprises in chemical Industry. The forward and backward linkage of these enterprises with various industries and by geographical regions have been analysed. The linkages of small industry to that of large scale enterprises and urban centres are also analysed in this chapter.

Chapter seven gives a brief summary and main conclusion of the study.