ENTREPRENEURSHIP AND MOTIVATION IN SMALL BUSINESS SECTOR OF KERALA - A STUDY OF RUBBER PRODUCTS MANUFACTURING INDUSTRY

Thesis submitted to the Cochin University of Science and Technology for the award of the Degree of

DOCTOR OF PHILOSOPHY IN ECONOMICS

Under the Faculty of Social Sciences

By

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Certificate

*Certified that the thesis "**Entrepreneurship and Motivation in Small Business Sector of Kerala – A study of Rubber Products Manufacturing Industry**" is the record of bona fide research work done by Mr. Mathew Emmanuel under my supervision and guidance. The thesis is worth submitting for the award of the degree of Doctor of Philosophy in Economics under the Faculty of Social Sciences.*

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17 March 2004

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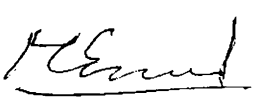
DECLARATION

I hereby declare that this thesis entitled ***"Entrepreneurship and Motivation in Small Business Sector of Kerala - A Study of Rubber Products Manufacturing Industry"*** *is the record of bona fide research work carried out by me under the supervision of Dr. P. Arunachalam, Reader, Department of Applied Economics, Cochin University of Science and Technology. I further declare that this thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title of recognition.*



Mathew Emmanuel

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CHAPTER 1

INTRODUCTION AND METHODOLOGY

This is an entrepreneurial age. Entrepreneurs are driving a revolution that is transforming and renewing economies worldwide. Entrepreneurship is the essence of free enterprise because the birth of new businesses gives a market economy its vitality. New and emerging businesses create a very large proportion of innovative products that transform the way people work and live. Early in the 20th century, Joseph Schumpeter, the Morvian-born economist writing in Vienna, gave the modern definition of an entrepreneur- as the person who destroys the existing economic order by introducing new products and services by creating new forms of organization or by exploiting new raw materials (Schumpeter, 1934). The economic theory definition gives entrepreneurs a sense of purpose and accomplishment. The economics of entrepreneurship are important to the economic development, market competition and social welfare of a country. Wealth creation and distribution are fundamental to social progress. Entrepreneurship is a major mechanism for ensuring both wealth creation and distribution. Schumpeter called this process *creative destruction* because entrepreneurs create new wealth through the process of destroying existing market structures.

The concept of economic development would, surely, have remained a fantasy, notwithstanding the abundance of resources but one, ie, the entrepreneur. The march of nations on the path of economic prosperity has proved this theorem, beyond the realm of the conceivable doubt. Entrepreneurs are considered to be the most important economic agents for the economic augmentation of any country. They act as the owners, producers, coordinators, market makers, organization builders, decision-makers, risk-takers, and innovators. They provide improved allocation of resources for the best interest of their enterprises as well as the country. They strive to increase

productivity and improve the quality of output through the application of more efficient production techniques, better plant layout and effective marketing policies. They ensure production of better quality of goods and services at lower cost. They generate employment opportunities and arrange for the betterment of the standard of living. Innovative entrepreneurs, with their ability to visualize the potential of a new idea and to make it happen, help in expanding the frontiers of development (Manimala, 1999). We may see entrepreneurs as heroes: as self-starting individuals who take great personal risk in order to bring the benefits of new products to wider world markets. It is a welcome sign that the economists, planners and the governments – the world over- have realized this essential truth and that their behaviour is a certain pointer in this direction. The present study also aims to contribute in this very sphere.

The modern world is characterized by change. Every day we hear of shifts in political orders, developments in economic relationships and new technological advancements. These changes feed each other and they are global. Developments in information technology allow capital to seek new business investment opportunities ever more efficiently. Success is sought out more quickly; failure punished more ruthlessly. Customers expect continuous improvement in the products and services they consume. As a result, businesses have to become more responsive. In order to keep their place in their markets they have to innovate more quickly. In order to compete, they have to become more agile. Consequently, the world is demanding both more entrepreneurs and more of enterprices. In the mature economies of the western world they provide economic dynamism. The fast- growing businesses they create are now the main source of new job opportunities. It is individual entrepreneurs who must restructure the post-Communist countries of eastern and central Europe and provide them with vibrant market economies. In the developing world entrepreneurs are increasingly responsible for the creation of

new wealth and for making its distribution more equitable. In short, we must become more entrepreneurial.

In the highly competitive globalized world economy survival and self-reliance was an urgent necessity. The natural answer to all these problems was industrialization. The progress of the West was imitated by the developing nations of Asia on a Euro-American model of large-scale capital intensive, technologically sophisticated urbanized model of industrialization, little realizing that their own resources to adopt this model were limited. The result was a spate of political-industrial collaborations with alien governments, and multinationals involving import of very advanced technology, borrowing huge sums leading to political alliances. The human resources were underutilized resulting in staggering unemployment.

The answer to all these problems in the opinion of economists and development thinkers the world over is unanimous- an increased production by "small industry" strategy depending mainly on labour resources and simple technology dispersed widely and flowing out of the traditional skills of the people. Increased production and small business strategy is obviously the outcome of human activity. Human activity, in this context is known as entrepreneurship. Entrepreneurship is the process whereby people, money, markets, production facilities and knowledge are brought together to create a commercial enterprise which did not exist before. The entire change and development of the civilization to a large extent is the result of trade, commerce and industrialization. In this development the human resource in general and entrepreneur in particular plays a pivotal role. David C. McClelland has rightly hypothesized that the need for achievement in individuals, i.e. the entrepreneurial potential is the psychological factor, which engenders economic growth and decline. The sense of high need achievement and motivation introduced by entrepreneurs bring about the required necessities in a class of society which transform the perception of the

economic thinking, which is necessary to bring about the economic development (McClelland, D.C. et al., 1969). Entrepreneurship is caused basically by motivation. Motivation refers to the behavioural dispositions at a specific time and acts as an energizer. It is a process that starts with a physiological or psychological deficiency or need that activates behaviour or a drive that is aimed at a goal or incentive. Motivation caused goal-directed behaviour. A person's desire for need fulfilment leads to entrepreneurial motivation. A need creates tension in mind. This tension is released when this particular need is satisfied by favourable environment, that is, incentives exist to satisfy the needs. Behaviour of entrepreneurs in their enterprise is a final product of the person's interaction with the given situation or environment. One can say that behaviour (B) is a function of person in interaction with the given situation or environment (E). The relationship may be symbolically represented as:

$$B = f(P \times E)$$

Man, as an entrepreneur is the heroic representation of the nation-building, constructive effort, and rise. The Growth theories stand incomplete, if it does not have some frame of a human postulate. The rise of the civilization and economic development is the centrifugal force of the complete process –as organizer of the community's resources, as worker and as the consumer of the goods produced of these three roles, which the man plays in the process of economic development, the one of the organizer of the factors of production is basically the vital one, and all important. Economic development is the outcome of industrialization that leads us to the Man-known in the business world as an 'Entrepreneur'-the change producing force in economic life.

The Kerala model of development is a development model, which stresses on the creation of social infrastructure rather than productive

infrastructure. The profound achievement of Kerala model is confined to physical quality of life index (PQLI) of the people. It is a partial development model, a development model without any economic growth. The main characteristic feature of Kerala model of development is its higher consumption even with low domestic production and income. The long term survival of the model depends either upon higher productivity of productive sectors or on an additional source of income to supplement its low domestic production and income to sustain its basic feature, namely higher consumption over low domestic income. At present, the Kerala economy is in the midst of appreciation and apprehensions associated with the evolution of Kerala model of development. The misgivings manifest in vivid forms, namely stagnation in industrial production, near stagnation in agricultural sector, unemployment among educated youth, disintegration of rural manufacturing, replacement of indigenous technology, liberal education and low domestic income. The factory sector of the State is on the sick bed and the traditional industries are in a crisis. The traditional coir and cashew industries have already migrated to the neighbouring States of Tamil Nadu and Karnataka. The existing large – scale industries are not in a position to convert this consumer state into a producer state.

The alternative strategy that the State requires at present is "Entrepreneur Centered Production Strategy". This strategy stands for the utilization of all industrial resources, revival of indigenous entrepreneurship and technology and constitution of growth centres for promoting the production of consumer goods and other manufacturing goods which stand as substitute for its imported products from the rest of the country. Of course the transformation of a remittance-consumption and welfare economy into an entrepreneurial-employment and sustainable-welfare economy is an enormous social, political and economic challenge. Given the necessary social and political will and determination, the transformation can be brought about in a

short period building on the strengths of the State's economy and its human resources. Lower costs, better quality, technological up gradation and export competitiveness are the prime considerations that need to be promoted at the present juncture of our industrial development. In this process the entrepreneur is the key man who envisages new opportunities, new techniques, new lines of production, new products and coordinates all other activities.

Kerala has no traditional industrial entrepreneurial class with few exceptional cases. Kerala's society gave the landlord a place of prominence. Hence, even the trading classes were more interested in acquiring landed property rather than entering the field of industry. However, Kerala presents a unique picture of entrepreneurship thriving in the socio-economic development of the State. The following are the main areas where one find entrepreneurial activity, not strictly in the Schumpeterian type: 1) Plantations-Rubber, Tea Coffee. Cardamom, etc. 2) Cashew nut export 3) Indigenous banking including chitties and kuries 4) Fish and other marine products export 5) Educational institutions 6) Hospitals and Nursing Homes 7) Film making, distribution and exhibition of films and 8) Professional entertainment groups such as drama troupes, musical concert groups, etc. The experience of Kerala's industrial development demonstrates one of lost opportunities due to very limited imagination and dynamism on the part of planners and administrators. Initiatives in the past failed to understand the entrepreneurial aspirations which are the driving force of entrepreneurial activities.

The entrepreneur as an individual is influenced by his motivational orientation, knowledge and skill about launching an enterprise and managing it successfully. The motivational orientation supported by his knowledge and skill about launching an enterprise and enterprise building will encourage him to choose an entrepreneurial career. The orientation of present inquiry mainly looks into this factor. The entrepreneur is also very deeply influenced by the tradition of his family and society. He internalises certain values and norms

from this source. Behaviour which reflects some inclinations towards initiative, risk taking, independence or dependence etc. is largely the result of socialization process in the family, the school and the society. Another factor which influences the entrepreneur is the environment. Environment includes mainly the economic policies of the government and the policies of the financial and commercial institutions. The other factors directly influencing in entrepreneurial development is the effective functioning of the support system. Support system includes financial and commercial institutions, research, training, extension and consultancy services as well as large industrial units interested in ancillary development. Entrepreneurship mostly considered to be the sole property of a group of individuals coming from traditional business families or from selected sections of the society. However, researches conducted by different individuals, and institutions at different periods have exploded the myth. It is now firmly established that entrepreneurship is not the monopoly of any particular group of persons. It can be developed in an individual in a conducive environment with proper training and other infrastructural supports.

Statement of the Problem

The issues relating to the slow pace of industrialization in Kerala have invited the attention of many scholars and consequently different explanations have been offered. Among these, certain groups consider the absence of entrepreneurship as the prime cause. Entrepreneurism as a way of life needs to be inculcated amongst the youth in particular so that they are able to effectively contribute towards socio-economic development of the State. Entrepreneurship is characterized as the 'third option'. The third option is the option for an individual to be self-employed and /or the employer of others. With the growing unemployment and tough competition, the third option has now become a necessary choice for each individual, particularly in Kerala. Accepting this hypothesis, the emerging issues are: Is there any potential for

entrepreneurship? What are the constraints under which entrepreneurs operate? Are they all successful? Is any difference between successful entrepreneurs and unsuccessful entrepreneurs? The performance of some of Kerala's industries is strong to make some contribution to this debate. Entrepreneurs would be prepared to engage in those activities, which have location advantage. In Kerala, it is believed, tremendous latent entrepreneurial talent exists which, if properly harnessed, could help in solving many of the serious problems facing the State. The well-known Kakinada experiment conducted by McClelland and his associates and entrepreneurship promotion work done by Gujarat Industrial and Investment Corporation and Entrepreneurship Development Institute of India, Ahmedabad, have clearly shown that it is possible to train first generation entrepreneurs through systematic training intervention.

In order to industrialize Kerala we have to exploit the fruits of globalized markets. Priority should be given to resource-based industries. Along with that it is very vital for us to develop our internal industrial base and create new generation entrepreneurs in the State. The best example is the Kerala natural rubber industry. Rubber-based industry is a strategic industry and is the third largest contributor to the national exchequer to our country. Rubber usage is tied with human and material mobility. Rubber is a versatile raw material used in the production of a wide range of goods. The field of rubber industry has opened up new vistas of enormous proportion in all facets of human activity in the past few years. Practically man's movement requires rubber. This ranges from the very basic personal article to enhance people's walking and running such as sandals, shoes, the passenger cars, bus and aeroplane tyres. The Indian rubber manufacturing industry produces 35,000 different items like auto and cycle parts, adhesive tapes, balloons, beltings, cables, cables, condoms, dipped goods, ebonite products, foam products, footwear products, gloves, hoses, latex thread, moulded products, rubberized

coir and jute products, rubber covered rollers, linings, mattings, sheetings, tubings, sports goods, surgical and pharmaceutical products, tyres and tubes, just to mention a few. Owing to its amazing multiplicity of uses rubber has now become the base material for manufacturing an incredible variety of products. The rubber goods manufacturing industry comprising of around 5500 units, can be basically classified into the tyre sector and the non-tyre sector. The well-organized tyre sector produces tyres of all kinds. The non-tyre sector predominated by small-scale units produces a wide range of industrial and consumer products. Today the rubber products manufacturing sector occupies an important position in the industrial map of India, employing 4 lakh workers to produce utility goods worth around Rs 14500 crores a year (Rubber Board, 2000). In the export front the rubber manufacturing industry made signal contributions. Major share of the Natural Rubber is produced in Kerala and India is the fourth largest producer in the world. But it goes out of Kerala to be processed and value-added in other parts of the country. Value-addition can be made in Kerala by promoting small-scale rubber manufacturering units in the State. What is required is to strike an equitable partnership between business and labour. Dynamic and innovative entrepreneurs can enhance competitiveness and return. The establishment of SSI units is best suited to this State in view of the availability of raw materials from agriculture and resource – based industries. Rubber industry is Kerala's nucleus of competitive and comparative advantages.

Operational Definitions

1. Entrepreneur: In the present study, by entrepreneur we mean the owner of an industrial unit. The proprietor of a single proprietorship, the managing partner of a partnership, the key promoters of a private limited company are considered entrepreneurs for the purpose of this study. There are virtually no big units (public limited companies) among the small- scale entrepreneurs under study.

2. Motivation: It refers to state within a person that drives behaviour towards some goal.
3. Need for achievement is the drive to excel, to achieve in relation to a set of standards, to strive to succeed
4. Need for power refers to a desire to control one's environment, including people and material resources.
5. Need for affiliation is the desire for friendly and close interpersonal relationships.
6. Capital is the money invested in business.

Objectives of the Study

The specific objectives of the study are:

1. To study the status of small-scale rubber based manufacturing firms and to see the dynamics of entrepreneurship of the region
2. To differentiate the socio-economic characteristics of successful and unsuccessful entrepreneurs in Kerala.
3. To analyze the nature of entrepreneurship by looking into the aspects of motivation patterns of successful and unsuccessful entrepreneurs.
4. To evolve strategies and action plans to strengthen the present effort of developing entrepreneurship.

Hypotheses Examined

The following hypotheses are examined:

1. Successful entrepreneurs will differ from unsuccessful entrepreneurs in terms of socio-economic characteristics like their sources of idea for starting the business, their reasons for getting into business, innovative

behavour and technological changes brought about, sales turnover, profits, personal income, and number of employees.

2. Successful entrepreneurs will score more on need for achievement than unsuccessful entrepreneurs and
3. Successful entrepreneurs will have lower need for power and need for affiliation than the unsuccessful entrepreneurs.

METHODOLOGY

Entrepreneurship is currently riding of a tidal wave of popularity. Record number of men and women alike are embracing entrepreneurship as a lifestyle. To observe and probe an entrepreneur is a difficult process. The subject matter is sensitive and extremely private. All entrepreneurs have shroud secrecy of their business around them. Hence all possible effort will be made to evolve the methods of employing a scientific approach, and logically founded. The study is based on both secondary and primary data. Secondary data have been collected from books, records, annual reports, and other publications. Data obtained from various sources such as Rubber Board, Kottayam, Rubber Research Institute of India, Kottayam, All India Rubber Manufacturers' Association, Small Industries Service Institute, Thrissur, Kerala Industrial and Technical Consultancy Organization Ltd., Cochin, Kerala State Small Industries Association, Cochin, Kerala State Planning Board, Trivandrum, State Directorate of Industries and Commerce, Trivandrum, Department of Economics and Statistics, Trivandrum, Institute of Small Enterprises and Development, Cochin, District Industries Centres, Kottayam and Ernakulam, Centre for Management Development, Trivandrum, Centre for Development Studies, Thiruvananthapuram, IIM Banglore, Xavier Institute of Mangement and Entrepreneurship, Banglore and National Institute of Small Industry Extension Training, Hyderabad. Primary data were generated through field surveys and personal interviews. Since the study is

based on the assumption that the psychological as well as socio-economic background of the entrepreneurs are the major factors determining their entrepreneurial motives, data relating to their socio-economic and psychological variables were collected. The methodology for the study comprised of interviews with guided questionnaire to measure socio-economic characteristics of entrepreneurs, use of Thematic Apperception Test to measure the entrepreneurial motivation. The Statistical Tools such as Averages, Percentages, Standard Deviation, Z Test and Chi-Square Test were used for the analysis of the data and to test the hypotheses stated earlier.

Measurement of Socio-Economic Status

In the study, a Socio-Economic Questionnaire was designed seeking personal particulars like age, education, occupation, experience, sociological factors like place of birth, founding and growth of factory, difficulties encountered in establishing the business, technological changes brought about, innovations, information about business, economic particulars like sources of finance, size of the firm, in terms of capital employed, number employed, and sales turnover, assistance required for growth, future plans, training needs etc.

Measurement of Motivational Dynamics of Entrepreneurs

Motivational dynamics of entrepreneurs with different socio-economic status was studied with the help of Projective Tests. The most important motivating factors relating to entrepreneurial behaviour is the David McClelland's theory of needs. It is applied in the present study for measuring entrepreneurial motivation. The theory focuses on three needs: Need for achievement, Need for power and Need for affiliation. Need for achievement is the drive to excel, to achieve in relation to a set of standards, to strive to succeed. Need for power refers to a desire to control one's environment, including people and material resources. It is the need to make others behave

in a way that they would not have behaved otherwise. Need for affiliation is the desire for friendly and close interpersonal relationships. McClelland (1961) has demonstrated that achievement motivation plays a decisive role for one to become an entrepreneur. The Need for Achievement (n Ach), the Need for Power (n Pow), and Need for Affiliation (n Aff) of entrepreneurs were measured by using a modified version of Thematic Apperception Test (TAT). TAT is a test designed to reveal drives or needs by the interpretation of pictures of emotionally ambiguous situations. Subjects were shown pictures and asked to make up stories about them, that is, to describe what was happening in the picture and what the probable outcome would be.

Table 1.1 : Examples of nAch Stories

High nAch Story	Low nAch Story
The boy just completed a long, daily violin lesson. He is happy with his improvement and thinks that his daily practice is well worth the hard work. He knows that to become a top, concern violinist by the time he turns 19, he will have to practice when his friends are partying, playing baseball, dating and attending musical concerts. He wants to be the best and is willing to pay whatever the price it takes.	The boy is simply holding his Dad's violin. He likes the music it makes, but feels that his Dad spends too many hours playing the instrument. If only he could plays without having to practice like his Dad. It seemed that practicing was boring and would take away valuable time from his friends and his girl-friend. May be there are other instruments that are easier to learn to play. They again, may be he should be a good listener of music performed by others.

McClelland assumed that what a person perceived and reported in the pictures reflected his/her values, interests and motives. From subjects' response to a series of pictures, McClelland calculated scores for three human needs- need for achievement, need for power and need for affiliation. For example, one picture was of a boy holding a violin. Table 1.1 provides hypothetical stories prepared by a person who scored high on need for achievement and one who scored low on need for achievement. Self-motivated need achievers like to set their own goals. Goals that they set are moderately difficult, but are not impossible to achieve. Also, those with high needs for

achievement like to receive feedback on their performance. Full description and administration of the TAT cards have been given in Chapter V.

Criteria for Selection of Entrepreneurs

The following criteria were adopted for the selection of entrepreneurs:

1. The entrepreneurs should have established an SSI unit and currently engaged in the manufacture of rubber products.
2. The entrepreneur should have been in business for at least three years at the time of investigation.
3. Successful entrepreneurs: The successful entrepreneurs are those who owned successful SSI units and were selected using the following multiple criteria-
    a) Consistent increase in the sales turnover in their units for a three-year period from 1999-2000 to 2001-02.
    b) The industrial unit has been rated as profit making by the entrepreneur.
    c) The entrepreneur expressed satisfaction with overall functioning of the enterprise and the desire to continue in the field.

4. Unsuccessful entrepreneurs: The criteria of identifying unsuccessful entrepreneurs were:

a) Consistent decrease in the sales turnover in their units for a three-year period from 1999-2000 to 2001-02.

b) The industrial unit has been rated as running at a loss/ waiting to be declared sick/already declared sick by the entrepreneur.

c) The entrepreneur expressed dissatisfaction with overall functioning of the enterprise and the desire to have some other job, so that he can sell or give up the enterprise.

Collection of data

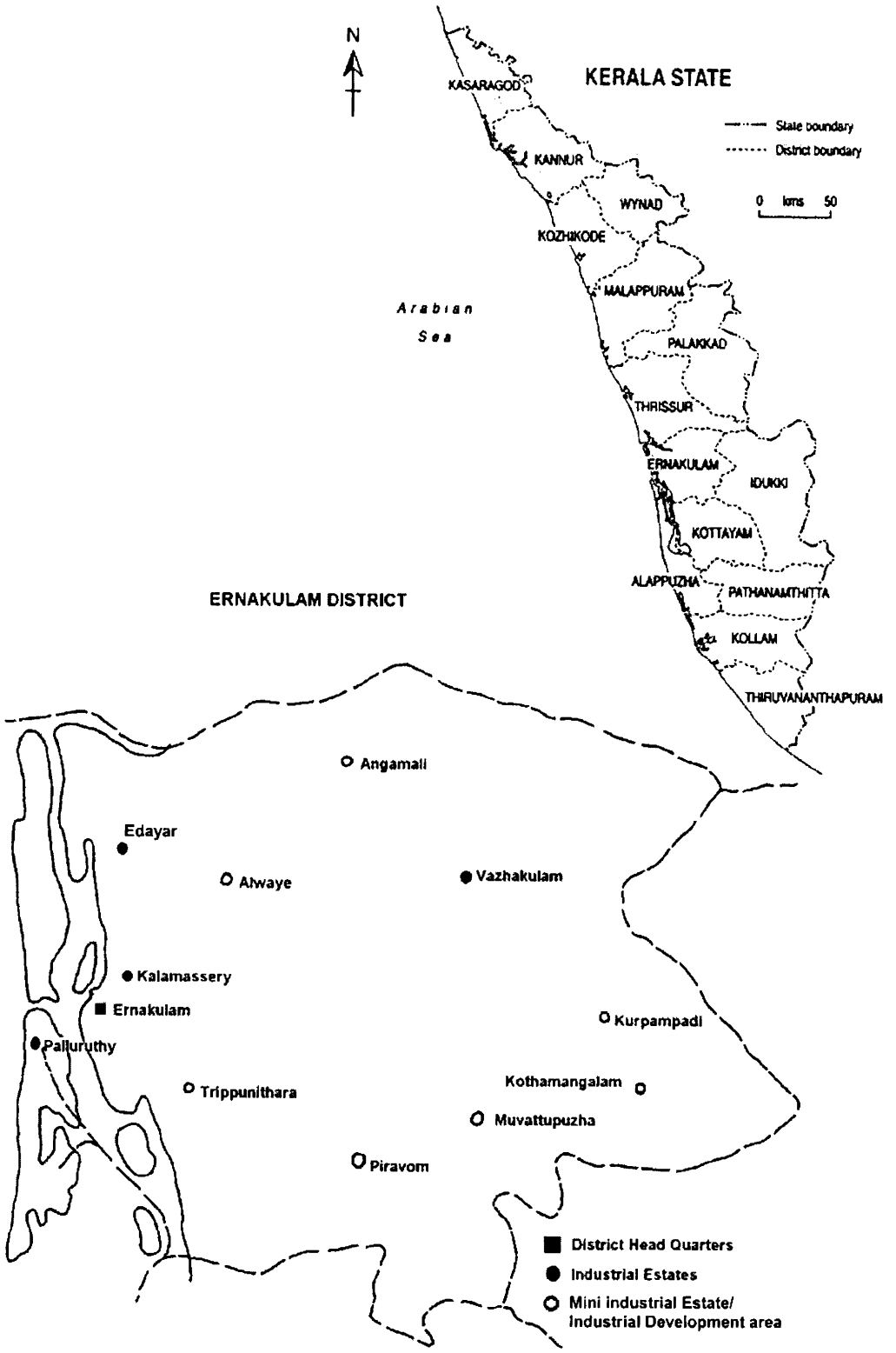
The data for the study from the entrepreneurs were collected in two different interview sessions spread over three months. For the selection of entrepreneurs, two districts ie. Kottayam and Ernakulam out of 14 districts in Kerala were selected as sample districts on the basis of largest number of small-scale rubber manufacturing units working in Kerala. Forty seven percent of the total small-scale rubber units in Kerala belong to these two districts. This comes 600 units which constitute the universe. The sample covered twenty percent of the enlisted SSI rubber units in the study region as per the *Directory of Rubber Goods Manufacturers in India, 1998-99*: *Kerala Section* issued by the Rubber Board. The sample selected for study also constituted approximately ten percent of the total small-scale rubber based units in Kerala. Samples have been selected by adopting lottery method of random sampling. Proportionate sampling of 20 percent has been applied to each District. As it is difficult to conduct a survey for identifying successful and unsuccessful entrepreneurs in the universe the selected sample has been categorised into successful and unsuccessful entrepreneurs based on multiple criteria. In Ernakulam district it is found that there are 18 successful and 24 unsuccessful entrepreneurs. In Kottayam district the numbers of successful entrepreneurs are 42 and unsuccessful entrepreneurs are 36. Thus sample for final study consists of 120 entrepreneurs, 60 each in 'successful' and 'unsuccessful' categories. The sample size and the universe are shown in table 1.2. The design for the study is presented in Table 1.3 and the study region is shown in figures 1.1 and 1.2

Table 1.2 Sample Size

Catagory	Ernakulam	Kottayam	Total
Successful Entrepreneurs	18	42	60
Unsuccessful Entrepreneurs	24	36	60
Sample Size	42	78	120
Universe	210	390	600

Table 1.3 Design for the Study

Region for the Study	Rubber based SSI units in Kottayam and Ernakulam Districts in Kerala	
Particulars	Entrepreneurs	
Sample Size	Successful	Unsuccessful
	60	60
Criteria for Selection of entrepreneurs	a) Increase in sales turnover b) The unit has been rated as profit making by the entrepreneur. c) Entrepreneur expressed satisfaction and desire to continue in business.	a) Decrease in sales turnover b) The unit has been rated as running at a loss/waiting to be sick/already declared sick by the entrepreneur. c) Entrepreneur expressed dissatisfaction and the desire to have some other job so that he can sell the unit.
Methodology	Interviews with guided questionnaire and use of projective tests	
Measuring Instrument	Coverage	
Socio-Economic Questionnaire	Age, education, occupation, place of birth, experience, founding and growth of factory, difficulties encountered, technological changes brought about, innovations, sources of finance, capital employed, number of persons employed, sales turnover, assistance required for growth, training needs, and future plans, etc.	
Projective tests	Modified version of TAT designed to measure the Need for Achievement, the Need for Power, and Need for Affiliation.	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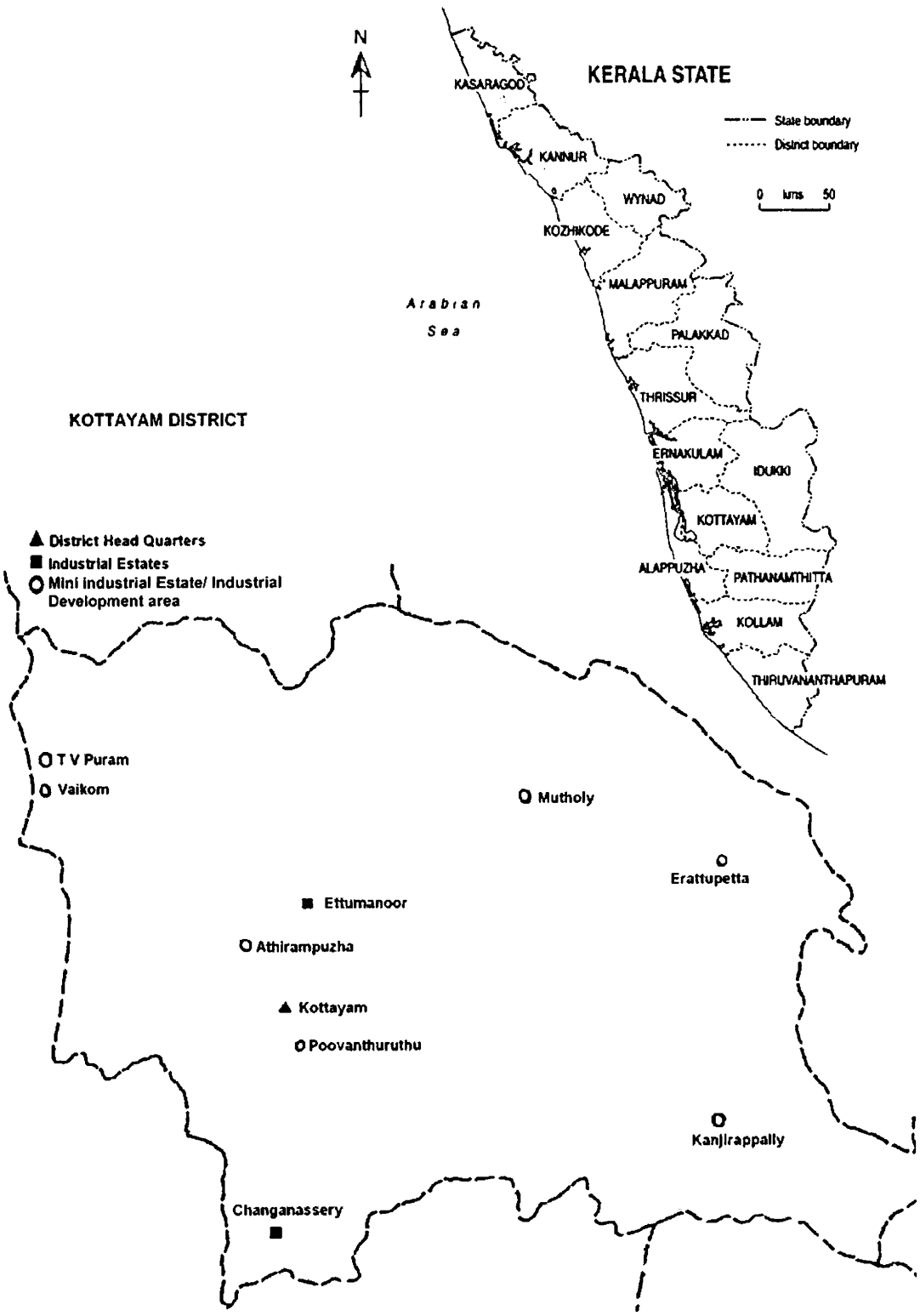
Kalamassery
Ernakulam
Palluruthy
Kurpampadi
Trippunithara
Kothamangalam
Muvattupuzha
Piravom
District Head Quarters
Industrial Estates
Mini industrial Estate/
Industrial Development area

Fig. 1.1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PATHANAMTHITTA
KOLLAM
THIRUVANANTHAPURAM
Arabian Sea
KOTTAYAM DISTRICT
District Head Quarters
Industrial Estates
Mini industrial Estate/ Industrial Development area
T V Puram
Vaikom
Mutholy
Erattupetta
Ettumanoor
Athirampuzha
Kottayam
Poovanthuruthu
Kanjirappally
Changanassery

Fig. 1.2

The first step in the process of data collection was a pilot study. For this a few entrepreneurs were interviewed. It was in the process of these interviews, that the questionnaire was prepared. Before serving the questionnaire to the respondents it was pre-tested with some other entrepreneurs. While pre-testing the questionnaire it was observed that some questions required modifications. As such, some questions were removed and a number of new questions were added in the final questionnaire.

Scope of the Study

Earlier studies have shown that a variety of factors contribute to entrepreneurial personality. It is true that entrepreneurship does not spring from everybody in a society. The entrepreneurial performance varies from society to society depending upon the family socialisation, ideological values, investment climate, material resources and the readiness of the socio-economic and political system. The thrust of the present study consisted mainly of the survey of the factors influencing entrepreneurial development and motivation in the region. The study aimed at providing a co-relation of different factors, viz. ancestral occupation, age, religion, with an entrepreneur's entry and growth into manufacturing field. Further, the other questions as to the extent of supply of indigenous entrepreneurs, factors affecting the supply, extent and quality of the efforts made to develop and motivate the entrepreneurs, and their impact both as stimulants and constraints for the development of entrepreneurship in the region.

In the present investigation, McClelland's theory of entrepreneurial motivation is applied and tested in the Kerala contextn of rubber industry. The scope of the study also covers the gathering, analyzing and critically evaluating small-scale rubber manufacturing industry in Kottayam and Ernakulam districts. Kottayam district is the largest rubber plantation area in the country. Kottayam is the rubber capital of India. The presence of Rubber Board is a great strength of the rubber city, ie. Kottayam. However, the level

of industrialization in the District is comparatively low. Ernakulam is the industrial district of Kerala. The presence of institutions such as the Coconut Development Board, the Cashew Export promotion Council, the Spices Board, the Coir Board, the Marine Products Export Development Authority, Cochin Special Economic Zone, Cochin Port, Cochin International Airport, all within a ten kilometre radius has made Kochi the commodity and plantation capital of the country. The study also focused on the critical appraisal of the government policies and an attempt was made to suggest and formulate effective strategies to promote, support and sustain the growth and development of the small-scale rubber manufacturing sector. This is an area in which not much research work has been done so far. This peculiar position of the region makes it an ideal locale for a study of this nature.

Limitations of the Study

The study was strictly confined to small-scale rubber manufacturing industry and limited to the Kottayam and Ernakulam districts of Kerala State in India. The data available on the entrepreneurial development are much more limited for whatever industries exist there. Thus, any serious attempt at drawing comprehensive plans for the regional development is hampered by the non-availability of systematic and reliable data and information on this vital subject of entrepreneurship.

Some studies on the motivational aspects of entrepreneurship are reported in the literature review. The present work may be the first of its kind in Kerala. So one of the limitations is that there is no scope for comparison of the findings of this study with those of a similar study. Another limitation is that entrepreneurs were selected from two districts only, due to the geographical distribution and enormousity of data involved. The number of respondents considered was limited to 120 entrepreneurs, 60 successful entrepreneurs and 60 unsuccessful entrepreneurs were selected for comparative study. The researcher had preferred to be a trifle ruthless in

delimiting the boundaries of the study in order to keep it within the scope of manageability. The inaccuracy of data obtained from field survey is a major constraint. The entrepreneurs seldom reveal the exact financial data like sales, turnover, growth rate of capital, profit etc. However, all the possible efforts have been made to collect details as correctly as possible by ensuring the confidentiality involved.

Scheme of the Study

In all, the present study consists of six chapters. Chapter 1 deals with the background scenario and the methodology used. The statement of the problem, the objectives of the study, hypotheses to be examined, sources of data, significance of the study and limitations of the study are given in this chapter. Chapter 11 locates the conceptual framework of entrepreneurship and motivation, review of literature pertaining to economic and social variables in entrepreneurship, and motive patterns of entrepreneurs. Chapter 111 brings out the present status of small business sector of Kerala. Chapter 1V explains the present status of rubber industry with particular reference to rubber economy of Kerala. Chapter V presents the findings of the study relating to the socio-economic characteristics and motivational patterns of entrepreneurs that contribute to entrepreneurial success. The main focus of the findings is a comparision of successful entrepreneurs with respect to the different variables investigated. Chapter V1 reports the main findings and suggestions of the study are summarized.

CHAPTER II

ENTREPRENEURSHIP AND MOTIVATION: CONCEPTIONAL FRAMEWORK AND REVIEW OF LITERATURE

What is entrepreneurship?

Entrepreneurship is the purposeful acting of an individual or a group of associated individuals, undertaken to initiate, maintain or aggrandize profit by production, or distribution of economic goods and services. It refers to a process of action an entrepreneur undertakes to establish his/her enterprise (Desai, 2001). Entrepreneur is an individual who creates a new enterprise. The Oxford Concise English Dictionary (1999) defines entrepreneur "as a person who sets up a business or businesses taking on greater than normal financial risks in order to do so".

Entrepreneurship is about value generation. It is a particular approach to wealth-generating activity. Entrepreneurs are responsible for such economic decisions such as what to produce, how much to produce and what method of production to adopt. The spirit of enterprise makes man an entrepreneur. Such a spirit transformed him a nomad to a cattle rearer, to a settled agriculturist, to a trader and to an industrialist. The development or underdevelopment is the reflection of the development or underdevelopment of entrepreneurship in the society. However, offering a definition of the entrepreneur or entrepreneurship presents an immediate problem. This is not that a definition is not available, but rather that there seem to be too many definitions. Like other economic concepts, entrepreneurship has long been debated. While some call entrepreneurship as "risk-bearing", others view it "innovating" and yet others consider it "thrill-seeking". Economists, however, have characterized the entrepreneur in a variety of ways. This indicate that the

quest for a universal definition has not moved on since 1971 when Peter Kilby commented that the entrepreneur had a lot in common with the 'Heffalump', a character in A.A. Milne's *Winnie-the-Pooh.* Heffalump is a large and important animal which was hunted by many individuals but no one succeeded in capturing this animal. All those persons who claim to have seen him describe differently about its peculiarities and thus no common agreement exists in their description about this animal (Kilby, 1971).

Joseph Schumpeter (1934) has established entrepreneurship as a force of 'creative destruction" whereby established ways of doing things are destroyed by the creation of new and better ways to get things done. He views entrepreneurs as innovators who use the process to shatter the status quo through new combinations of resources and new methods of commerce. In the opinion of A.H. Cole (1959), entrepreneurship is the purposeful activity of an individual or a group of associated individuals, undertaken to initiate, maintain or aggrandize profit by production or distribution of economic goods and services. Entrepreneurship is the creation of an innovative economic organization or network of organizations for the purpose of gain or growth under conditions of risk and uncertainty (Dollinger, 2003). In almost all of the definitions of entrepreneurship, there is agreement that we are talking about a kind of behaviour that includes: (1) initiative taking, (2) the organizing and reorganizing of social and economic mechanisms to turn resources and situations to practical account, and (3) the acceptance of risk or failure. The concept of entrepreneurship would be incomplete, unless it is distinguished from the concept of management. While the two functions may have overlapping fields of operation, yet the fineness lies in the fact that entrepreneurship relates to the domain of 'newness'. The perception of new ideas, technology, and its application under new styles or form, initiative and capacity to bear risks, are the elements of entrepreneurship, whereas, a manager is concerned with day-to-day working of the enterprise.

Though the term entrepreneur is often used interchangeably with entrepreneurship, yet they are conceptually different. The relationship between the two is just like the two sides of the coin as depicted in the table 2. 1

Table 2. 1 : Distinction between Entrepreneur and Entrepreneurship

Entrepreneur	Entrepreneurship
Person	Process
Organizer	Organization
Innovator	Innovation
Creator	Creation
Initiator	Initiative
Decision-maker	Decision
Leader	Leadership
Risk-taker	Risk
Motivator	Motivation
Communicator	Communication
Administrator	Administration
Planner	Planning
Director	Direction
Technician	Technology
Self confident	Self confidence

The word 'entrepreneur' is derived from the French verb 'entreprendre' which means to undertake. In the early 16th century, the Frenchmen who organized and led military expeditions were referred to as 'entrepreneurs'. Around 1700 A.D. the term was used for architects and contractors of public works. Quesnay regarded the rich farmer as an entrepreneur who manages and makes his business profitable by his intelligence, skill and wealth. The term entrepreneur appears to have been introduced into economic theory by Richard Cantillon (1759), an Irish economist of French descent (Casson, 2003). If entrepreneurship is one of the hot labels today, it is because the concept of being an entrepreneur has changed. Entrepreneurs were once seen as small business founders with a strong independent streak. Entrepreneurs were once born, not made. Things

are different now (see Table 2. 2). What is emerging today is a class of professional entrepreneurs who rely more upon their brains than their guts- and who have been trained to use both methods and technology to analyze the business environment.

Table 2. 2: Entrepreneurs

Then	*Now*
Small-business founder	True entrepreneur
Boss	Leader
Lone Ranger	Networker
Secretive	Open
Self-reliant	Inquisitive
Seat of the pants	Business plan
Snap decisions	Consensus
Male ownership	Mixed ownership

Source: Adapted from Tom Richman, "The Evolution of the Professional Entrepreneur" Inc.'s The State of Small Business, Special Issue, 1997, p.50

The new entrepreneurs come from different sources, too. Many of them are corporate –tract dropouts, pushed out by downsizing or lured out by the quest for status, big money, or control of their lives. Globalization has promoted an entrepreneurial sprit in both big and small companies, while information technology now enables many small start-ups to compete against big business. Today's entrepreneurs are deeply embedded in networks. Networking, the process of enlarging the entrepreneur's circle of trust, is a negotiation process. Networking is actually a series of methods of securing resources without taking ownership. These include various forms of partnerships, alliances, and informal agreements.

Theories of Entrepreneurship

The theoretical firm is entrepreneurless- the Prince of Denmark has been expunged from the discussion of *Hamlet*. In the economic analysis of neo-classical economists, there is no room for enterprise and initiative. Both the micro and macro theory have assigned a passive role to entrepreneurship. In the firms' behaviour analysis, the entrepreneur or the management group is viewed as a passive agent of the production process who acts mechanically to changes imposed on it. The maximization models which have been recently developed have introduced the firm's real investment programme or its financial mix or the attributes of a new product to be launched by the company as a decision variable. These decisions seem to smell more of the ingredients of entrepreneurship. In fact, this decision variable calls for entrepreneurial skills.

Robert Hebert and Albert Link argued that contemporary economic theory recognizes the entrepreneur as an independent factor of production on a more or less equal footing with land, labour and capital. Their taxonomy of entrepreneurial theories begins with Richard Cantillon and includes the following (Hebert and Link, 1989).

Taxonomy	Theorist
German tradition	Johann von Thunen and Joseph Schumpeter
Chicago tradition	Frank Knight and Theodore Schultz
Austrian tradition	Ludwin Von Mises and Israel Kirzner

We attempt to review, briefly, the development of the concept of entrepreneurship in economic literature in the following way.

Entrepreneurship: A Function of Risk-Bearing

Richard Cantillon, an Irishman with a Spanish name living in France was the first who introduced the term 'entrepreneur' and his unique risk-bearing function in economics in the early 18th century. By the middle of the 18th century

Cantillon had presented the first theory of entrepreneurship-casting the entrepreneur as a speculator in an uncertain environment (Barreto, 1989). He defined entrepreneur as an agent or dealer who buys factors of production for combining them into marketable products. Cantillon portrayed an entrepreneur as one discharging the function of direction and specialization. In his essay titled *Essay on the Nature of Commerce* Cantillon (1730) wrote that land is the source of all wealth and recognized three types of economic actors: (1) landowners who are financially independent, (2) entrepreneurs who engage in market exchanges at their own risk in order to make a profit and (3) hired people who avoid active decision making in order to secure contractual guaranties of stable income. Cantillon's entrepreneur did not initiate change, nor were they innovators. Instead, he used a risk-theory of profit as a means to identify entrepreneurship. For example, Cantillon wrote that the role of his entrepreneur was to transact purchases at certain prices and sales at uncertain ones.

Entrepreneurship: A Function of Organization

Jean-Baptiste Say, another French economist expanded Cantillon's ideas and conceptualized the entrepreneur as an organizer of business firm, central to its distribution and production functions. Say's major work, *A Treatise on political Economy*, published in 1803, presented an analysis of the production and distribution or products in a competitive market system, with a dominant role assigned to the entrepreneur as coordinator.

Say has made distinction between the role of the capitalist as a financier and the entrepreneur as an organizer. In developing his theory of entrepreneurship, Say visualized three agents of production: (1) land and other natural agents that contribute to it, (2) capital and (3) human industry. Say further separated human industry into the functions of the scientist, the entrepreneur and the workman. According to Say, while the scientist (the theory developer) and the workman (who provides execution) are the

important in the production process, it is the entrepreneur who drives the productive process by applying theory and directing execution. Say argued that in agriculture, manufacturing, or commercial activity, some actor must command the necessary resources and organize the productive process. Coordination, supervision and decision-making are functions performed by an entrepreneur. In other words, after seeing an economic opportunity, Say's entrepreneur had to estimate demand and then supply.

In contrast to Say, his English contemporaries, the "School of Ricardo" almost completely neglected the entrepreneur. Their engine of analysis, articulated on the basis of the interactions of capitalists, landowners and labourers conceived largely as macro-economic groups, found no place for a distinction either between profits and interest or between entrepreneurs and capitalists and it provided no scope for an analysis of the behaviour and constitution of business units. Only later did these subjects begin to receive due recognition at the hands of Ricardian critics clearly prompted by the writings of Say. During the neoclassical era, the entrepreneur remained a central figure in the explanation of distribution. Alfred Marshall advocated the significance of organization along the services of a special class of business undertakers. From Cantillon to Marshall, entrepreneurial concept was treated in the same manner and elevated entrepreneurship to the fourth factor of production, though this function was identified by different names.

Frank Knight on Entrepreneurship

Frank Knight (1921) developed and elaborated the view that entrepreneurs receive a return for bearing uncertainty. His major criticism of the theory up to that date was that even those who appreciated the importance of uncertainty were unclear about its nature and implications. Knight's contribution was his distinction between the notions of risk and uncertainty. He defined risk as a random event with a known distribution. Uncertainty was

considered to be randomness where the distribution of probabilities was completely unknown. Knight theorized that some agent must take responsibility for making decisions where uncertainty exists. Knight's agent was the entrepreneur, who acts as a decision maker in an uncertain environment. Knight considered that his entrepreneur replaced one of the functions of the price system – what products are produced. In performing this function of determining consumers' wants and directing production toward perceived wants, the entrepreneur faces the presence of uncertainty. Knight stated that the 'following factors of entrepreneurship enabled the entrepreneur to deal with uncertainty: foresight and executive capacity, the knowledge of one's own powers, a disposition to thrust them in action, and a knowledge of other men's powers and judgements.

According to Knight, it is not change but uncertainty, the imperfect knowledge of the future and the possibility of incorrect expectations, which give rise to profit. To Knight, profit is the residual, if any, left for the entrepreneur after he pays out the contractual incomes agreed on for the factor he hires. Knight identified the entrepreneur as being ultimately in control of the venture, ultimately responsible for all receipts and all outlays, and thus subject to the uncertainty that surrounds the amount and the difference between them. The profit of any particular entrepreneur depended on his or her own ability and good luck as well as on the general level of initiative and ability in the market.

Entrepreneurship: A Function of Innovation

Joseph A. Schumpeter has done pioneering work on entrepreneurship. Unlike Say's theories, Schumpeter's concept of the entrepreneur was widely recognized and discussed. He published for the first time, his major work *The Theory of Economic Development* in German in 1911, and later on an English version of it came out in 1934. He identifies the

human agent at the centre of the process of economic development. Schumpeter presents three key typologies in Chapter 2 of this book and all of these are of practical interest to the student of entrepreneurship. The first of these typologies is very famous and has to do with the main types of entrepreneurial behaviour. These are the following five: (1) the introduction of a new good- that is, one with which consumers are not yet familiar- or of a new quality of a good; (2) the introduction of a new method of production, that is, one not yet tested by experience in the branch of manufacture concerned, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially; (3) the opening of a new market, that is, a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before; (4) the conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether, this source already exists or whether it has first to be created; and (5) the carrying out of a new organization of any industry, like the creation of a monopoly position or the breaking up of a monopoly position.. One practical implication of Schumpeter's typology of entrepreneurial behaviour has to do with the very concept of combination, and a useful exercise for a student of practical entrepreneurship might be train himself/herself in thinking up new combinations, using case studies.

Schumpeter's second typology, which has to do with the motivation of the entrepreneur, is also famous. What drives the entrepreneur? Schumpeter says, are primarily three things: (1) "the dream and the will to found a private kingdom; (2) the will to conquer; and (3) the joy of creating" (Schumpeter, 1934). We can translate Schumpeter's formulations into modern language as: (1) the desire for power and independence; (2) the will to succeed; and (3) the satisfaction of getting things done. It should be pointed out that money *per se* is not what ultimately motivates the entrepreneur, according to Schumpeter. He

adds, in *The Theory of Economic Development* that his idea about the motivation of the entrepreneurs falls within the field of psychology.

During the last decade of his life the emphasis in Schumpeter's writings on entrepreneurship shifted from economic theory to sociology and economic history. *Capitalism, Socialism and Democracy* is mainly a sociological work, in the sense that it focuses on the institutional structure of society, and what Schumpeter has to say about the entrepreneur in this book is primarily of a sociological character (Schumpeter, 1942). The thrust of his ideas is clear from the title of its most important section on entrepreneurship- 'The Obsolescence of the Entrepreneurial Function'. A number of institutional factors, Schumpeter argues, are weakening entrepreneurship and contributing to the stagnation of capitalism as a social system. For Schumpeter, entrepreneurship is essentially a "creative activity" and it consists of doing such things that are generally done in the ordinary course of business. It is essentially a phenomenon that comes under the wider aspects of leadership.

Schumpeter's concept of entrepreneurship denotes at once a broad and a narrow sense. It is wide in the sense that it includes not only the independent businessman but also dependent employees of a company like company directors and managers who actually carry out innovative functions. It is narrow to the extent that the individuals who merely operate an established business without performing innovative functions are excluded. It refers only to those who actually perform innovative functions. By nature, entrepreneurship is not a profession or a permanent occupation. Therefore, entrepreneurs cannot form social classes as capitalists or wage-earners (Schumpeter, 1934). His main theory was conceived in the context of Industrial Revolution. His innovating entrepreneur represents the most vigorous type of enterprise but this type of entrepreneur is rare specie in developing countries. The Schumpeterian concept of entrepreneurship has been elaborated by other prominent writers later, such as March and Simon

(1958) who stress the need to distinguish between the investor and the innovator (entrepreneur); and Drucker (1985), who illustrates entrepreneurship and intrepreneurship, with numerous examples of innovation.

Entrepreneurship: A Function of Religious Beliefs.

The German sociologist Max Weber (1930) was perhaps the first theorist to indicate that ideological values lead directly to entrepreneurial behaviour. Religion and its impact on enterprising culture were first analyzed by Weber in the Western context. Weber's view of entrepreneurship is often identified with the theory of charisma, and according to this interpretation, this main contribution is to be found in his analysis of that special type of human being - the charismatic person - who makes other people want to follow him or her, simply by virtue of his or her extraordinary personality. According Weber, charisma has only functioned as an important motor of change during the early stages of humankind, and it is much less important in capitalist society, where economic change is mainly due to enterprises being geared to profit opportunities in the market.

According to Weber, the entrepreneurs can (1) only be found in an exchange economy, and (2) entrepreneurship has much more to do with the direction of economic action in the form of enterprises than with the economic operations of a single individual. Weber in explaining why capitalism has been successful in western civilizations but less so in other civilizations, developed a multidimensional model of economic and social conditions. An important social aspect of Weber's model was the 'protestant work ethic", which demanded a life of good works and the avoidance of spontaneous, impulsive, self-enjoyment. According to Weber, protestant work ethic became the driving force behind entrepreneurial activities and behaviours.

Despite Weber's theory of entrepreneurial behaviour, little if any research was conducted on the behavioural and psychological traits of

entrepreneurs by organizational science researchers until Schumpeter argued in 1947 that entrepreneurs were individuals who possessed certain traits (Schumpeter, 1947).

Israel Kirzner on Entrepreneurship

As mentioned earlier in this chapter Herbert and Link's taxonomies of entrepreneurial theories contained the Austrian tradition and included Ludwig Von Mises, Israel Kirzner and other economists (Herbert and Link, 1989). Mises (1966) emphasized the importance of entrepreneurship in a market economy. For example, Mises stated, "Entrepreneur means acting man in regard to the changes occurring in the data of the market". Mises also stated that there is an entrepreneurial element present is all human action. While Mises discussed the importance of the entrepreneur in a market economy, he did not attempt to develop a theory of entrepreneurship. The Austrian economist who developed such a theory was Israel Kirzner. According to Krizner, essentially an entrepreneur is any person who is alert to hitherto unexploited possibilities for exchange. Spotting such possibilities enables the entrepreneur to benefit by acting as the middleman who effects the change. Krizner originally developed a theory of entrepreneurship that contained three concepts. The first concept is that of *alertness* by individuals to gain pure profits. This entrepreneurial process is the force that generates the market process and determines its direction. Second, using Hayek's concept of an equilibrating force, the entrepreneur, by *arbitraging markets*, creates a greater consistency or compatibility of plans. Errors can occur in the market process but result from individuals overlooking opportunities to gain pure profit by not being sufficiently alert. Third, Kirzner regarded the ownership of physical resources to the totally distinct from the entrepreneurial process. Krizner excluded time and uncertainty from his original theory (Krizner, 1973). Krizner's original theory of entrepreneurship was based on Mises's concept of human action. Krizner considered that the entrepreneurial element

in all human action involves an alertness to perceive Mises's "ends–means" framework, where maximizing behaviour occurs.

Krizner (1982) altered his original theory of entrepreneurship in response to criticism that time and uncertainty is important consequences in human decision-making. For example, a theory that "ignores uncertainty cannot explain entrepreneurial losses, only entrepreneurial gains" (Hebert and Link, 1989). Krizner's modified theory retains the basics of the original theory while distinguishing between entrepreneurship in single period market decisions and in multiple periods involving time and uncertainty. Entrepreneurship in multiple periods involves gaining pure profit by speculative insights of "time-to-come that pushes aside to some extent the swirling fogs of uncertainty, permitting meaningful action". While Krizner's modified theory involves arbitrage and speculation, both theories describe entrepreneurship as bringing about a greater mutual consistency in market transactions. For Krizner, the entrepreneur is a person who perceives the opportunities and hence benefits from the possession of knowledge not apparently possessed by others. Thus entrepreneurship is central to the process by which information is disseminated throughout the economy.

Casson's view of Entrepreneurship

A more promising approach to the theory of entrepreneurship is offered in a study by Mark Casson (1982) who synthesizes and extends previous work by Knight, Schumpeter, Krizner and many others. Casson defines an entrepreneur as "someone who specializes in taking judgemental decisions about the coordination of scarce resources". Every term in this definition being carefully chosen to highlight the specific content of the entrepreneurial role. The entrepreneur is a person, not a team, committee or organization and he is someone who has a comparative advantage in making decisions; moreover, he reaches a different decision from other people in the

face of identical circumstances either because of access to better information or because of a different interpretation of the same information. The true hallmark of successful entrepreneurship is the ability to take good decisions (Casson, 2000). The entrepreneurial function is, in principle, performed in all societies by individuals whose judgement differs from the norm, and military and political life may provide as much scope for entrepreneurship as the economic one. Capitalism then is simply an economic system that harnesses entrepreneurship to industrial decisions. Even economic entrepreneurship under capitalism, however, may range from pure arbitrage or financial speculation to the non-routine decisions of salaried managers and the daring innovations of self-employed businessmen. Casson's theory throws new light on the long-lived reluctance in economic thought to divorce proprietorship from entrepreneurship, thus identifying the capitalist with the entrepreneur (Blaug, Mark, 1986). The industrial entrepreneur frequently was and still is capitalist, and this association between the two roles is not accidental but stems from the very nature of entrepreneurship as consisting of an eccentric evaluation of economic events which other people are unwilling to support.

Casson has one fundamental point of agreement with the 'Austrian' theorists. The entrepreneur's reward is a residual income not a contractual income, and it is derived from the process of exchange or market–making activities. For Casson, the middleman is an entrepreneur, just as for Krizner. Entrepreneurs reallocate resources. To achieve such a resource reallocation they must trade in property rights and if their attempts at coordination (that is resource reallocation) are successful they will derive a pure entrepreneurial profit. Even at this level there are, of course, differences of emphasis. In other respects, Casson and the Austrian theorists are far apart. For Schumpeter and Kirzner the 'pace of change' is determined by the activities of the entrepreneurs. Each had different ideas of the personal qualities which were important in instigating change and each was clear that change and

entrepreneurship go together like a horse and cart and that the entrepreneur is the horse. In Casson's scheme however, there is a tendency to view the 'pace of change' as an accompaniment to entrepreneurial activity rather than as its result. This makes Casson's entrepreneur more akin to that of Knight.

Theodore Schultz's Concept of Entrepreneurship

Nobel laureate Theodore Schultz (1975) has developed a theory of entrepreneurship based on his theory of human capital. Schultz offered two contributions in developing his theory of entrepreneurship. First, he defined entrepreneurship as "ability to deal with disequilibria". According to Schultz, individuals in many different walks of life engage in optimizing behaviour, which entails reallocating resources to regain equilibrium. All of them are in these respect entrepreneurs. Second, Schultz reported that a number of studies have produced evidence that education affects people's ability to perceive and react to disequilibria. Schultz argued that entrepreneurial ability is useful and can be considered to be an identifiable marginal product. For example, Schultz reported that entrepreneurial activity is a differential return to ability:

> "My argument is that disequilibria are inevitable in a dynamic economy. These disequilibria cannot be eliminated by law, by public policy, and surely not by rhetoric. A modern dynamic economy would fall apart were it not for the entrepreneurial actions of a wide array of human agents who reallocate their resources and thereby bring their part of the economy back into equilibrium. Every entrepreneurial decision to reallocate resources entails risk. What entrepreneurs do has an economic value. This value accrues to them as a reward for their entrepreneurial performance. The reward is earned" *(Schultz, 1980).*

Schultz criticized the standard concept and treatment of entrepreneurs used by others in the following four areas: (1) the concept is restricted to businessmen, (2) it does not take into account the differences in

allocative abilities among entrepreneurs, (3) the supply of entrepreneurship is not treated as a scarce resource, and (4) there is no need for entrepreneurship in general equilibrium theory. The concept of the entrepreneur rarely appears in the theoretical core of economics. When it does, it is confined to businessmen, thus it excludes labourers who are reallocating their labour services and it excludes housewives, students, and consumers who are also in the act of reallocating their resources. In standard theory, it is hard to find a treatment of the supply of entrepreneurship. An exception is Gary. S Becker's "supply curve of entrepreneurial capacity" (Becker, 1971).

Schultz stated that an important aspect of an analysis of entrepreneurship is the demand for and the supply of entrepreneurs. According to Schultz, the demand for entrepreneurship has several distinctive characteristics. If often emerges somewhat abruptly, it is transitory, and it is specific to each type of change in economic conditions. What an entrepreneur expects to earn for his allocative effort is the incentive that motivates his actions. The quantity and quality attributes of the incentives are the essential elements of the demand for entrepreneurship, namely, the amount of the incentive and the transitory nature of the incentive. About the supply of entrepreneurs, Schultz stated that the aggregate supply of entrepreneurship is the sum of how many adults are actually and potentially active entrepreneurs, of the quality of their generic abilities and of their acquired abilities. The quality of the supply is enhanced over time by investment in various forms of human capital (Schultz, 1990).

Resource-based Theory of Entrepreneurship

The resource-based theory of entrepreneurship is put forward by Marc J. Dollinger (2003) of Kelley School of Business, Indiana University. The resource-based theory is the most appropriate to understand new venture creation because it best describes how entrepreneurs themselves build their businesses from the resources and capabilities they currently possess or can

realistically acquire. Successful entrepreneurship is not simply an analytical exercise. Industry and competitor analysis- the application of the theory of industrial organization economics- alone is insufficient. The resource-based theory argues that the choice of which industry to enter and what business to be in is not enough to ensure success. The theory says that nature and quality of the resources, capabilities, and the strategies the entrepreneur possesses and can acquire can lead to long-term success.

Using resources that are rare, valuable, hard to copy, and have no good substitutes in favourable industry conditions provides *sustainable competitive advantage*. Competitive advantage occurs when the entrepreneur is implementing a value-creating strategy not simultaneously being implemented by any current or potential competitors. Sustained competitive advantage is competitive advantage with a very important addition: current and potential firms are unable to duplicate the benefits of the strategy. Choosing the appropriate resources is ultimately a matter of entrepreneurial vision and intuition. The resource-based theory is efficient and practical because it focuses on the strengths, assets, and capabilities of entrepreneurs and their resources. It incorporates market opportunity and competition into the model, but it emphasizes resources. The entrepreneur may already control these resources or may be able to obtain them in the future. But without resources to exploit a situation, even the best situation cannot create an entrepreneur.

A 'resource' is any thing or quality that is useful. No two entrepreneurs are alike, and no two new firms are identical. The resource-based theory of entrepreneurship makes sense for the study of new venture creation because it focuses on the differences that characterize entrepreneurs and the founding of their companies. Entrepreneurs are individuals who are unique resources to the new firm, resources that money cannot buy. The theory says that firms have different starting points for resources and other

firms cannot get them (called resource immobility). Resource-based theory values creativity, uniqueness, entrepreneurial vision and intuition, and the initial conditions (history) under which new ventures are created.

What are the origins of new firms? Economic organizations that have their origins in the resources of the entrepreneur and the assets that entrepreneurial team controls can potentially acquire and finally, combine and assemble. Firms usually begin their history with a relatively small amount of strategically relevant resources and skills, and each company's uniqueness shows how these resources are expected to perform in the marketplace. Resource-based theory has a rather simple formula:

Buy or acquire resources and skills cheaply

Transform the resources or skill into a product or service

Deploy and implement the strategy

Sell dearly for more than you paid.

The resource-based theory holds that *sustainable competitive advantage* is created when firms possess and employ resources and capabilities that are:

1. Valuable because they exploit some environmental opportunity. Resources are valuable when they help the organization to implement its strategy effectively and efficiently. This means that in a 'strengths, weaknesses, opportunities, and threats' model of firm performance, a valuable resource exploits opportunities or minimizes threats in the firm's environment. A valuable resource is useful for the operation of the venture. Examples of valuable resources and capabilities are property, equipments, people, and skills such as marketing, financing, and accounting.

2. Rare in the sense that there are not enough for all competitors. A resource can be considered rare as long as it is not widely available to all

competitors. If supply and demand is in equilibrium, and the market-clearing of the resource is generally affordable, it would cease to be rare. Examples of resources that may be considered rare are things like a good location, managers that are also considered good leaders, or the control of natural resources like oil resources.

3. Hard to copy so that competitors cannot merely duplicate them. Hard to copy resources may not be able to be duplicated easily or inexpensively. It is difficult for firms to copy each other's skills and resources

4. Nonsubstitutable with other resources. Nonsubstitutable resources are strategic resources that cannot be replaced by common resources.

When a firm possesses and controls resources with these four characteristics, it can withstand competitive pressures. If the new enterprise can protect these resources and maintain these four qualities, it will have competitive advantage over the long term.

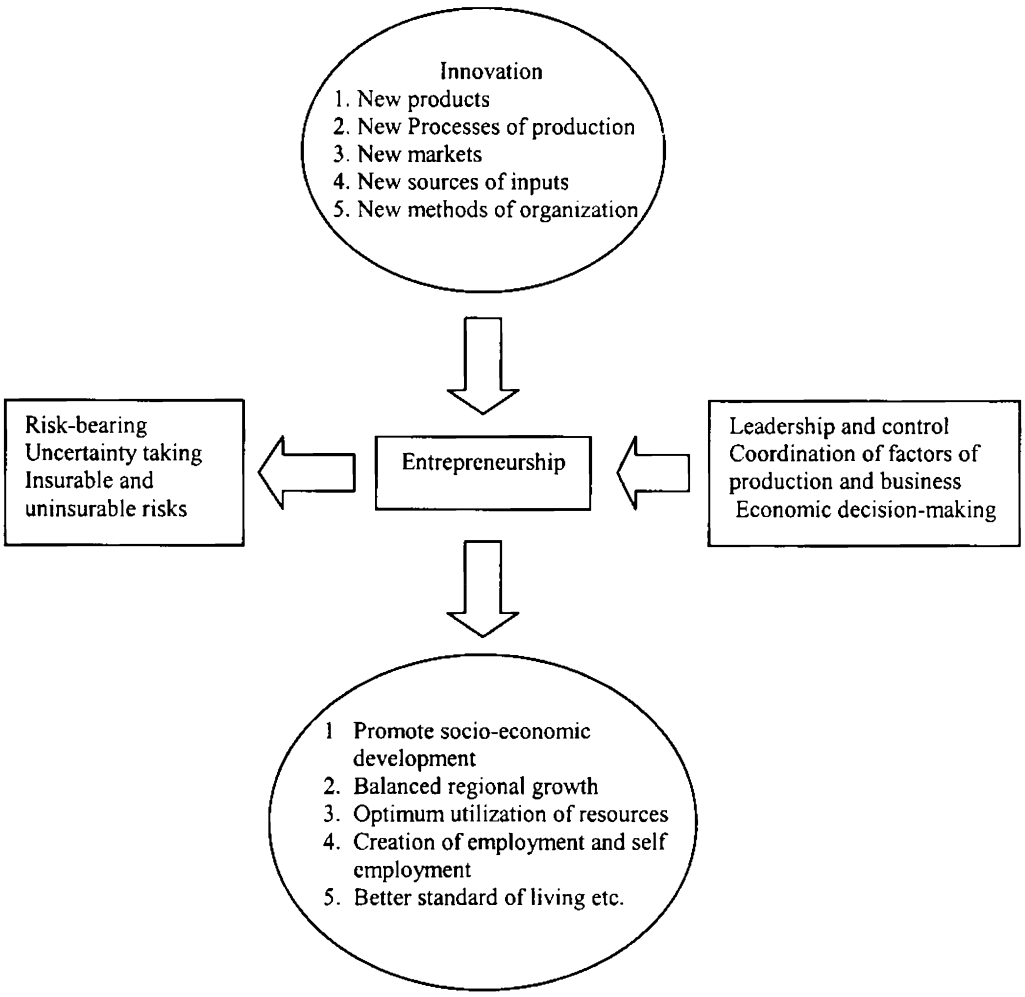
Role of Entrepreneurship in Economic Development

Economic development involves a movement from one state of the economy to another, is often attributed to the actions of entrepreneurs who are the change-agents in the economy. Entrepreneurs are the directors in the drama of economic development who move heaven and earth in the theatre of the nation's economy to accelerate the process of economic development through innovations, adventurism, incalculable risk-bearing and optimum coordination of factors of production. The entrepreneurship exists in every field of economic endeavour. Entrepreneurs are significant because they have an important effect on world economies. We reorganize entrepreneurs, first and foremost, by what they actually do-by the tasks they undertake. This aspect provides a starting point for understanding the entrepreneur and the way, which they are different from other types of manager. The role of

entrepreneurship in economic development involves more than just increasing per capita output and income; it involves initiating and constituting change in the structure of business and society. This change is accompanied by growth and increased output, which allows more to be divided by the various participants. Entrepreneurship is a scarce resource, in fact, the critical resource needed for development. It is a mindset, which will triumph over all obstacles, a treasure to be sought, husbanded, and nurtured, even inculcated in the young (Holmstrom, Mark, 1999).

In a state like Kerala, where the intensity of unemployment is skyrocketing, the crying need of the hour is to sow the seed of entrepreneurship, especially among the unemployed youth. McClelland (1961) has rightly hypothesized that the need for achievement in individuals i.e. entrepreneurial potential is the psychological factor which engenders economic growth and decline. The sense of high need achievement motivation introduced by entrepreneurs brings about the required necessities in a class of society which transform the perception of the economic thinking, which is necessary to bring about economic development. Thus entrepreneurs are dynamic individuals who go through firewater to promote economic and social progress of a country through active participation in business. In the current development discourse, it is increasingly being claimed that the state-led development model of the past is dead; in its place people-centered development initiatives have gained new prominence (Majumdar, 2001). The characteristics of entrepreneurship are shown in figure 2. 1.

Figure 2. 1



Some important economic effects of entrepreneurial activity are listed below:

1. Combination of economic factors

Economists generally recognize three primary economic factors: the raw materials nature offers us, the physical and mental labour people provide and capital. All the products and services bought and sold in an economy are a mix of these three things. Value is created by combining these three things together in a way, which satisfies human needs. Factors do not combine themselves, however. They have to be brought together by

individuals working together and undertaking different tasks. The co-ordination of these tasks takes place within organizations. As an organization builder, the entrepreneur performs planning, co-ordination, and control functions. Many economists regard entrepreneurship as a kind of fourth factor that acts on the other three to combine them in productive ways. In this view, innovation is simply finding new combinations of economic factors.

2. Providing market efficiency

Economic theory suggests that the most efficient economic system is one in which unimpeded markets determine the price at which goods are brought and sold. An economic system can only reach this state if there is competition between different suppliers. Entrepreneurs provide market efficiency. If a supplier is not facing competition then they will tend to demand profits in excess of what the market would allow and so reduce the overall efficiency of the system. Entrepreneurs are on the look out for such excess profits. Being willing to accept a lower profit themselves they will enter the market and offer the goods at a lower price.

3. Accepting risk

Risk-taking is the soul of any entrepreneurship. An entrepreneur assumes the responsibility for loss that may arise due to unforeseen contingencies in future. He guarantees interest to creditors, wages to labourers and rent to landowners. Risk is associated with innovation since the market of an innovative product or service may or may not respond to the expectation of an entrepreneur. Risk also exists due to change in customer's preferences, shortage of raw materials or sudden unexpected calamities. Entrepreneurs provide a service by taking this risk off people's hands.

4. Processing of market information

Classical economics makes the assumption that all the relevant information about a market is available to and is used by producers and

consumers. However, human beings are not perfect information processors. In practice, markets work without all possible information being made available or being used. One view of the entrepreneur is that they keep an eye out for information that is not being exploited. By taking advantage of this information, they make markets more efficient and are rewarded out of the revenues generated. This information is about opportunities.

Economists, sociologists, political people, psychologists all place entrepreneur in a special position. They have their own views on entrepreneur. Economists viewed him as an essential element in generating investment opportunities. Sociologists viewed him as a sensitive energizer in modernization of societies. Psychologists examine him as an entrepreneurial man. The industrialization is an effective instrument of growth and welfare. This depends on the entrepreneurial development, as the industrial entrepreneur is the backbone of economy. Entrepreneurs are viewed as kingpins of business not merely because they are willing to trade for a profit but they are the right exploiters of available resources in the right manner at the right time, at the right place, using the opportunity, thus in the process create more goods, employment and growth of national income. On the whole, the role of entrepreneurship in economic development of a country can best be put as 'an economy is the effect for which entrepreneurship is the cause'. There are evidences to believe that countries which have proportionately higher percentage of entrepreneurs in their population have developed much faster as compared to countries which have lesser percentage of them in the society.

The Entrepreneurial Process

The entrepreneurial process is the creation of new value through the entrepreneur identifying new opportunities, attracting the resources needed to pursue those opportunities and building an organization to manage those resources. The approach to the entrepreneurial process described here is based

on four interacting contingencies. A contingency is simply something which must be present in the process. The four contingencies in the entrepreneurial process are the entrepreneur, a market opportunity, a business organization and resources to be invested as shown in figure 2.2. Each of these is explored in some detail.

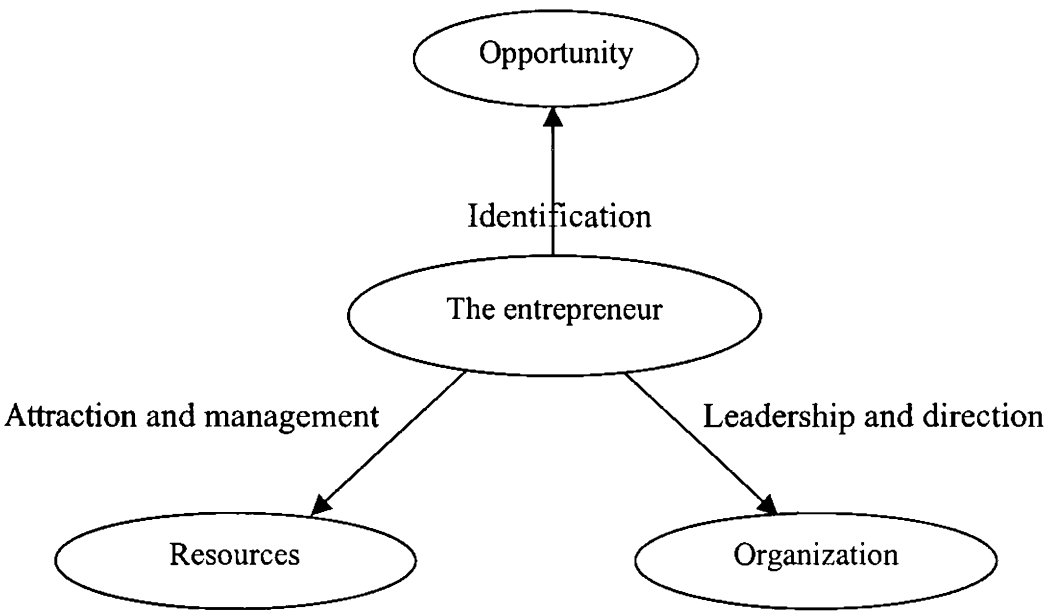


Figure 2. 2 The entrepreneurial process

1. The entrepreneur

The entrepreneurial process results from the actions of entrepreneurs. Entrepreneurs often act singly but in many instances entrepreneurial teams are important. Entrepreneurs are human brain needed to perform the functions of not only production and distribution of products and services, but also to innovate ideas with new thinking and research bend to identify the opportunities. The entrepreneurial process can only occur if the entrepreneur acts to develop an innovation and promote it to customers. The entrepreneur is the ultimate general manager, responsible for orchestrating relationships among all parts of the enterprise (Jain, 1998).

2. Opportunity

An opportunity is the gap left in a market by those who currently serve it. It represents the potential to serve customers better than they are being served at present. The entrepreneur is responsible for scanning the business landscape for unexploited opportunities or possibilities. Opportunity is like beauty. It lies in the eye of the beholder. Entrepreneurship flourishes when there is an opportunity. Information technology is one of the new tools which open new opportunities for small enterprises.

3. Organization

In order to supply the innovation to the market, the activities of a number of different people must be co-ordinated. This is the function of the organization that the entrepreneur creates. Entrepreneurial organizations are characterized by strong, often charismatic leadership from the entrepreneur. Every organization built by an entrepreneur is different. The essential features are the assets of the organization, that is the things which it possesses, its structure, namely how it arranges communication links within itself, its processes: how it adds value to its inputs to create its outputs and its culture, that is the attitudes and outlooks that influence the way people behave within the organization.

4. Resources

The final contingency in the entrepreneurial process is resources. This includes the money which it is invested in the venture, the people who contribute their efforts, knowledge and skills to it, and the physical assets. Resources also include brand names, company reputation and customer goodwill. The entrepreneur must decide what resources will make up the organization. They must be active in attracting resources to their venture such

as suitably qualified employees, financial backing in the form of investor's money, the support of customers and suppliers (Wickham, 1998).

The entrepreneurial process is dynamic. Success comes from the contingencies of the entrepreneur, the opportunity, the organization and resources coming together and supporting each other. The entrepreneur plays a critical role in identifying opportunity, building and leading organization, and attracting and managing resources.

Factors in Entrepreneurial Supply

If one look at any of the world's economies one could see a certain number of entrepreneurs operating within them. They will be responsible for providing economic efficiency and bringing new innovations to the market. In mature capitalist economies such as Western Europe and North America they are responsible for new job creation. In the former communist world, the emergence of an entrepreneurial class is a necessary prelude to establishing a market- driven economic order. One of the key tasks of economic development in developing countries is the fostering of an entrepreneurial spirit. The emergence and development of entrepreneurship is not a spontaneous one but a dependent phenomenon of economic, social, psychological and political factors often nomenclatures as supporting conditions to entrepreneurial development. The conditions may have both positive and negative influences on the emergence of entrepreneurship. Positive influences constitute facilitative and conducive conditions for the emergence of entrepreneurship, whereas negative influences create inhibiting milieu to the emergence of entrepreneurship. The economist considers the structure of economic incentives found in the market environment as most relevant to entrepreneurial activity. The sociologist emphasizes society's value and status hierarchy as the main force governing entrepreneurial activity. On the other hand, the psychologist stresses certain inner, psychic concerns as the prime movers of risk-taking and innovation.

However, this approaches, based on each scholar's particular field of specialization, together focus on the prime determinants of entrepreneurial supply. These are discussed briefly one after another.

Economic Factors

According to the economists entrepreneurship and economic growth will take place in those situations where particular economic conditions are most favourable. The economist's view is a counter-hypothesis to all theories on entrepreneurial supply and may be seen in empirical studies such as those of G.F. Papanek and J.R. Harris (Papanek, 1962; Harris, 1970). According to their view, while psychological drives for pecuniary gain are present in all societies, what really matters is the economic environment. Economic conditions are sufficient conditions for the emergence of industrial entrepreneurs. When an individual recognizes that the market for a product or service is out of equilibrium, he may purchase or produce at the prevailing price and sell to those who are prepared to buy at the highest price (Krizner, 1973). If there is lack of vigorous entrepreneurial response in manufacturing, it is due various kinds of market imperfections and inefficient economic policies. The economic incentives include industrial policy of the government, taxation policy, supply and demand position, infrastructural facilities for profitable investment, availability of raw materials, competition in the market, adequate knowledge of technology, and many others. The political economy paradigm of Flavia Derossi (1971) holds political power as the paramount factor in entrepreneurial development in all the developing countries. Proximity, though not necessarily in the geographical sense, or access to the sources of power, may be the determining factor of private investment.

Thus in economic analysis, entrepreneurial functions are supposed to be directed towards the materialistic objective of maximization though its foundation may be of a high order such as spiritual, social, or ethnic.

Entrepreneurial activity is a form –giving activity, giving form to the wishes of the society, to ideas, to the efforts of factors and to the raw materials to be processed through. Small industry is a natural habitat of the entrepreneur where his role is like of a stoker who keeps the fire burning.

Sociological factors

The theories having sociological orientation are postulated by Max Weber, Cochran and Hoselitz. Sociologists argue that entrepreneurship is most likely to emerge under a specific social culture. They consider the entrepreneur as a role performer corresponding to the role expected by the society. Max Weber (1930) analyzed religion and its impact on economic aspect of the culture. According to him, religious beliefs are the prominent force for generating entrepreneurial activity and entrepreneurial growth is dependent upon ethical value system of the society. These beliefs, it is contended, produce intensive effort in occupational pursuits, the systematic ordering of means to ends, and the accumulation of assets. Sociological theory of entrepreneurial supply, as expounded by Thomas Cochran (1965) emphasizes social sanctions, cultural values and role expectations. The entrepreneur represents society's model personality and the individual's performance as a business man is influenced by three factors: his own attitudes towards his occupation, the role expectations of sanctioning groups and the operational requirements of the job. Society's values are the most important determinants. According to Peter Marris (1967), to assemble or reassemble from what others have missed, sensitivity to business and social environment, zest in industrial development and entrepreneurial courage are the factors that make an entrepreneur.

As stated by Hoselitz (1964) "the culturally marginal groups are promoting economic development". Such groups because of their ambiguous position are peculiarly suited to make creative adjustments and thereby

develop genuine innovations. In several countries entrepreneurs have emerged from a particular socio-economic class. The protestant ethic of the west is said to have contributed to the emergence of a new class of industrialists. In the U.K., U.S.A., and Turkey, ranks of entrepreneurs were filled from trading classes, Samurai in Japan, family pattern in France, Yoruba in Nigeria, Christians in Lebanon, Halai Memon industrialists in Pakistan, Marwaries and Parsees in India are considered to be dominant social classes as source of entrepreneurship.

Psychological Factors

The psychological school of thoughts was advocated by J.A. Schumpeter, D.C. McClelland and E. Hagen. They emphasize certain non-materialistic, inner, psychic concerns as the prime movers for risk bearing and innovation. Joseph Schumpeter is the first major theorist to put the human agent at the center of the process of economic development. To Schumpeter (1942), entrepreneurs are individuals motivated by a will to power and their special characteristics being: 1) an intuitional capacity to see things in a way which afterwards proves to be true; 2) a kind of effort of will and mind to overcome fixed habits of thinking; and 3) the capacity to surmount social opposition against doing something new. David C. McClelland (1961) argued that it is the high need for achievement which drives people towards entrepreneurial activities. This achievement motive is inculcated through child rearing practices, which stress standards of excellence, material warmth, self-reliance training and low father dominance. Individuals with high achievement motive tend to take keen interest in situations of high-risk desire for responsibility and a desire for a concrete measure of task performance. He disagrees with Weber's assumption that entrepreneurs are motivated by profits. The present study also supported that there is the need for developing achievement motivation for promoting entrepreneurship in an economy like Kerala. Hagen (1964) attributed the withdrawal of status respect of a group to

the genesis of entrepreneurship. Giving a very brief sketch of the history of Japan, he concludes that developed sooner than any non-western society except Russia due to two historical differences. First, Japan had been free from 'colonial disruption' and secondly, the repeated long continued withdrawal of expected status from important groups (Samurai) in her society drove them to retreatism which caused them to emerge alienated from traditional values with increased creativity. This very fact led them to the technical progress. Hagen believes that the initial condition leading to eventual entrepreneurial behaviour is the loss of status by a group.

Government Actions

The government by its actions or failure to act also does influence both the economic and non-economic factors for entrepreneurship. Any interested government in economic development can help, its clearly expressed industrial policy, promote entrepreneurship in one way or other. By creating basic facilities, utilities and services and by providing incentives and concessions, the government can provide the prospective entrepreneurs a facilitative socio-economic setting. Such conducive setting minimizes the risks that the entrepreneurs are to encounter. Thus the supportive actions of the government appear as the most conducive to the entrepreneurial growth. This is true of the Indian entrepreneurship also. Scholars like Medhora (1965) conclude that the late inception of entrepreneurial growth in India was due to lack of entrepreneurial motivation but due to non-commitment of the political-structure.

After discussing various factors which may be useful or otherwise for the emergence to entrepreneurs, an effort is made to give a comparative study of factors which favours the emergence to entrepreneurs and side by the factors which may act as barriers to the growth of entrepreneurs are as shown in table 2. 3

Table 2. 3 Factors Influencing Entrepreneurship

Facilitating factors	Barriers
1 Technical knowledge	1 Lack of technical skills
2 Entrepreneurial training facilities	2 Lack of proper market
3 Market contacts	3 Lack of capital
4 Family business	4 Lack of Business knowledge
5 Availability of capital from sources	5 Social stigmas
6 Successful role models	6 Time pressures and distractions
7 Local manpower	7 Legal and bureaucratic constraints
8 Capable advisors and supporters	8 Political instability
9 Supplier assistance	9 Patent inhibitions
10 Government and institutional supports	10 Non co-operative attitude of banks

The fact remains that the various factors as observed above will cause emergence of entrepreneurship is integral and not additive at all. Thus an integrated and multidimensional approach is required for the growth of entrepreneurship in backward areas and for identifying opportunities. Globalization of the Indian economy has given new dimensions and responsibilities to the crusaders of entrepreneurship in the country.

Entrepreneurial Competencies

The entrepreneurial talent available in any society is dependent upon the type of competencies associated with entrepreneurship. Studies in the field of entrepreneurial development indicate that qualities, the initiative, sensitivity to environment, sense of work commitment and persistence are positively associated with successful entrepreneurs. The term competence or trait implies a person's underlying characteristics leading to his/her effective or superior performance in a job (Boyatzis, 1982). It is a good combination of various qualities and traits required to perform the job effectively. A job competence is an underlying characteristics of a person in that it may be motive, traits, skill, aspects of one's self image or a body of knowledge which one uses. The existence of these characteristics may or may not be known to the person. In this sense, the characteristics may be unconscious aspects of the

person. The underlying characteristics possessed by an entrepreneur which result in superior performance are called the entrepreneurial competencies or traits. No two entrepreneurs are exactly alike (Siropolis, 1998). In order to understand more about competencies, let us understand the meaning of knowledge, skills and motives, which form various components of entrepreneurial competencies.

What is body of knowledge?

Knowledge means collection and retention of information that an individual stores in some parts of his brain. Knowledge is necessary for performing a task but not sufficient. Besides knowledge, an individual should have skills to translate the knowledge in to action.

What is a Skill?

Skill is the ability to demonstrate a system and sequence of behaviour that are functionally related to attaining a performance goal. Using a skill is not a single action. Knowledge could be acquired by reading, listening, visuals, etc., while skills can be acquired only through practice, which enables the individual to demonstrate the system and sequence of behaviour that are functionally related to performing a task. Thus knowledge as well as skills required to perform a given task effectively.

What is Motive?

A motive is a recurrent concern for a goal state or condition appearing in fantasy, which drives, directs and selects behaviour of the individual. Motive includes thoughts related to a particular goal state. In simple terms, motive is an urge to achieve one's goal what McClelland (1961) terms 'Achievement Motivation'. This continuous concern of goal achievement directs a person to perform better and better. McClelland points out that in his book 'The Achieving Society' that successful entrepreneur is

characterized by: a) an unusual creativeness; b) a propensity of risk-taking; and c) a strong need for achievement.

Thus to perform any given task including that of launching an industrial venture and managing it successfully a person (entrepreneur) needs a set of knowledge, skill, motives which could be together labelled as competencies.

However, there prevails a controversy on what it takes to be a successful entrepreneur. Earlier, there used to be a firm belief that those persons with business family background could become successful entrepreneurs. Subsequently, the sharpened knowledge of entrepreneurial competencies over the last four decades made people to believe that entrepreneurs are made not born. According to this view, persons possessing proper knowledge and skill acquired through education and experience can become successful entrepreneurs. Entrepreneurship Development Institute of India (EDI), Ahmedabad, conducted a research study to identify what makes an entrepreneur successful. The study was conducted under the guidance of late Professor David C. McClelland of Harvard University. Following is a list of major competencies identified by the study that lead to superior performance of the entrepreneurs:

1. Initiation- given the demand of the situation, the entrepreneur takes initiation to start an industry.
2. Looking for opportunities- he looks for an opportunity and takes necessary action accordingly.
3. Persistence- he follows the Japanese proverb" Fall seven times, stand up eight times". He makes repeated efforts to overcome obstacles that get in the way of reaching goals.
4. Information seeker- takes individual research and consults experts to get information.

5. Quality conscious- he has always strong urged to excel to beat the existing standard.
6. Commitment to work- does every sacrifice to get the task completed.
7. Efficiency Seeker- makes always tenacious efforts to get the task completed within minimum costs and time.
8. Proper planning- frames realistic business plans and follows them rigorously to accomplish the task.
9. Problem solver- always tries to find out ways and means to tide over the difficult times.
10. Self confidence- a strong believer in his strengths and abilities.
11. Assertive- able in asserting his issues with others for the cause of his enterprise.
12. Employees' well wisher- keeps concern and takes proper action to improve the welfare of the employees working in his enterprise.

A successful entrepreneur today must be a practical industrial psychologist, well versed in guiding, developing, and controlling the actions of his men to the expected direction. Having gone through the foregoing qualities of a successful entrepreneur, an integrated view of the qualities of a successful entrepreneur can be listed as follows: 1) Enterprising, 2) Risk bearer, 3) Creative thinker, 4) Ambitious, 5) High need for achievement, 6) Change-agent, 7) Ability to marshal resources, 8) Good organizer and administrator, 9) Prompt and sound decision-maker, and 10) Strong commitment and firm determination.

Intrapreneurs- An Emerging Class

In recent times a new breed of corporate entrepreneurs has come to the forefront in large organizations. They are called "intrapreneurs". The term "intrapreneur" was coined in America in the late seventies. Intrapreneurship

describes the innovation that occurs inside established companies through efforts of creative employees (Holt, 1992). Intrapreneurship gives the managers of a corporation the freedom to take initiative and try new ideas. Several senior executives of big corporations in United States left their jobs to start their own small business because the top bosses in these corporations were not receptive to innovative idea. Existing businesses have the financial resources, business skills, and frequently the marketing and distribution system to commercialize innovation successfully. Yet, too often the bureaucratic structure, the emphasis on short-term profits, and a highly structured organization inhibit creativity and prevent new products and businesses from being developed. These executives turned entrepreneurs achieved phenomenal success in their new ventures. Some of them posed a threat to the corporations they left a few years ago. These types of entrepreneurs came to be known as intrapreneurs. Intrapreneuring is a revolutionary system of speeding up innovations within large companies by making better use of their entrepreneurial talent. Intrapreneurship can be defined as entrepreneurship within an existing business. It can bridge the gap between science and the marketplace (Hisrich and Peters, 2002). It gives the corporation the ability and opportunity top conduct market experiments. It also enables the corporation to diversify from its core business through internal processes. Intrapreneurship is also sometimes termed as corporate entrepreneurship by some authors. Such corporate brain drain is a worldwide phenomenon and is not confined to the United States. Intrapreneurship, in many ways, similar to new venture entrepreneurship (Rathore, 2001). Corporate entrepreneurship requires innovation, risk-taking, commitment, an objective analysis of opportunities and turning into a business reality. It requires a consistant and mutually reinforceing set of philosophies, beliefs, and practices (Sathe, 2003).

Industrialists all over the world started devising ways and to stopping the flight of their brightest executive. In 1976 Norman Macras wrote in the London *Economist* that successful big corporations should become

'confederations of entrepreneurs'. The American management expert Gifford Pinchot-III wrote his famous book '*Intrapreneuring*' in 1985 and has put forth his thesis that companies generally lost their resourceful men mainly because their managements did not give their ideas a try. According to him, the companies should learn to make use of the entrepreneurial talents within the organization if stagnation and decline were to be avoided. A few U.S. companies are noted for their sustained ability to be intrapreneurial. Among these are Procter & Gamble, Johnson & Johnson, and the 3M Company of Minneapolis, Minnesota. 3M has created over 100 new businesses or major product lines in its history (the information on 3M is extracted from Peter Drucker's (1985) *Innovation and Entrepreneurship*. The computer giant International Business Machines (IBM) adopted the concept of Independent Business Units. Each unit is promoted and run by an executive (intrapreneur) as if he was an independent entrepreneur. More than one dozen such units are now working in this company. General Motors (GM) launched Saturn Corporation as an entrepreneurial subsidiary. It seeks to promote new ways of making, selling and servicing cars and is headed by the executives of the parent company. Many other American Corporations, e.g., Dupont, Texas Instruments, American Telephone and Telegraphic Co. also are promoting intrapreneurs in their own way.

ENTREPRENEURIAL MOTIVATION

Motivation is the act of stimulating someone or oneself to get a desired course of action, to the right button to get desired action. In simple terms, motivation means any idea, need, emotion, or organic state that prompts a human being to an action. Entrepreneurship is to a great extent the product of motivation. There are three sets of variables that contribute to an entrepreneur's motivation to launch a venture. These three groups of variables are the antecedent background variables, the triggering variables and the enabling variables.

1. Antecedent Factor

The antecedent factor involves 'stage-setting' variables. These are situations that cause the individual to consider the possibilities of entrepreneurship. Some of these variables are historical or environmental in nature. Many entrepreneurs grew up in entrepreneurial families. Other situations develop over time that leads to the entrepreneurial decisions. An individual's education may be a factor. Some educational paths tend to lead naturally to entrepreneurship than others, e.g. engineering or management background. Current jobs are often antecedents to venture creation. Jobs may be antecedent variables in two ways. One is that jobs often create opportunities for ventures. Many ventures were started as a result of either the skills or the ideas that the entrepreneur developed while working in an existing job. The second reason that the job may be seen as increasingly dissatisfying. Thus, the seed of 'going out on my own' is planted and increasingly nurtured.

2. The Triggering or Precipitating Factor

The antecedent factor sets the stage for venture creation over time, the triggering factor is that even which specifically triggers the entrepreneurial act. These are personal, professional or financial changes in an entrepreneur's life that are perceived as important to entrepreneurial decision. For example, being laid off or fired from a job can be a triggering factor. Being approached by another entrepreneur who is seeking a partner could cause one to leave present job and begin a venture. Sometimes, a missed promotion or a bad remark by the manager may be enough to spark the entrepreneurial flame. Some ventures are started by retirees who see the venture as an avenue to continue being active, to meet new challenges and to increase their level of income.

The willingness or motivation to start a venture is shown in the form of an equation. This theoretical model is multiplicative rather than additive. This means that if either factor is zero, the motivation to launch a venture will be zero. As the strength of the variables increases, the motivation to launch a venture will also increase.

Entrepreneurial Motivation Equation

$$M = \Sigma Ai \times \Sigma T j \text{ where}$$

Ai = antecedent variables and

Tj = triggering variables

Antecedent Factor × Triggering Factor = Motivation to start a venture

(Creativity, Background, Personality, Education)

(Loss of Job, Offer from partner, Invention)

3. The Enabling Factor

The antecedent variables together comprise the potential entrepreneur's motivation to launch a venture. However, this does not mean that a venture will be actually launched. The more important components of entrepreneurial venture- opportunity and resources are critical to the decision to launch a venture. The entrepreneurial equation now can be expanded to include these two critical variables.

Expanded Entrepreneurial Motivation Equation

$$\text{Venture launch likelihood } L = \Sigma Ai \times \Sigma Tj \times \Sigma Ek$$

where

Aj = antecedent variables.

Tj = triggering variables and

Ek = enabling variables

Antecedent factor×Triggering factor×Enabling factor =Likelihood of venture launch

(Creativity, Background, Personality, Past Experience, Education)	(Loss of Job, Offer from Partner, Invention)	(Opportunity, Resources)

In the above equation one has the antecedent and triggering factors plus the added enabling factor, which is comprised of opportunities and resources. The model is multiplicative in that a zero score on any of the three factors will reduce the likelihood of a venture launch, to zero. Conversely, the greater the strength of variables in any of the three factors, the greater will be the likelihood that a venture will be started.

McClelland's Theory of Achievement Motivation

David McClelland (1961) sponsored by the Center of Entrepreneurial Studies at Harvard University, linked Protestantism, the need for achievement (nAch), and economic development by hypothesizing that a psychological motive derived from family socialization intervened between Weber's Protestant work ethic and entrepreneurial behaviour. Entrepreneurial motivation could be well understood with a deep study of the McClelland's Needs Theory. McClelland argued that family socialization consisting mainly of child –rearing practices that stressed standards of excellence, maternal warmth, self-reliance, and low father dominance contributes to the development of nAch. McClelland further concluded that nAch is the key for entrepreneurial success. According to McClelland, a person acquires three types of needs as a result of one's life experience. These needs are:

1. **Need for Achievement (nAch)**: The drive to excel, to achieve in relation a set of standards, to strive to succeed. This refers to one's desire to accomplish something with own efforts. Need for achievement is a learned need in which people want to accomplish reasonably challenging goals through their own efforts, like to be successful in competitive situations, and desire unambiguous feedback regarding their success.
2. **Need for Power (nPow)**: It refers to a desire to control one's environment, including people and material resources. It is the drive to make others behave in a way that they would not have behaved otherwise.

These mean the one's desire to dominate and influence others by using physical objects and actions.

3. **Need for Affiliation (nAff)**: These refer to needs to establish and maintain friendly and warm relations with others. It is a desire to seek approval from others, conform to their wishes and expectations, and avoid conflict and confrontation.

Need for Achievement

McClelland also suggest that these three needs may simultaneously be acting on an individual. But, in case of an entrepreneur, the high need for achievement is found dominating one. High achievers are successful in entrepreneurial activities such as running their own businesses and managing a self-contained unit within a large organization (McClelland and Winter, 1969). Achievement motivation is the major contributory factor for entrepreneurship. A society constituting individuals with a high level for achievement would come up as entrepreneurs. People with high need for achievement behave in an entrepreneurial way. People with high achievement motive like to take calculated risks and want to win. High achievers are not motivated by money *per se* but instead employ money as a method of keeping sure of their achievements. Such people strive for personal achievement rather than the rewards of success. They have a desire to do something better and more efficiently than it has been done before. Need for achievement is simply the desire to do well not so much for the sake of social recognition or prestige but for the inner feeling of personal accomplishment. It is this need for achievement that motivates people to take risk. Need for achievement stimulates the behaviour of a person to be an entrepreneur. High achievers are not gamblers: they dislike succeeding by chance. They prefer the challenge of working at a problem and accepting the personal responsibility for success or failure rather than leaving the outcome to chance or the actions of others. They

perform best when they perceive their probability of success as being 0.5, that is, where they estimate that they have a 50-50 chance of success. Similarly, they dislike high probability of success because then there is no challenge to their skills. High nAch people are therefore most satisfied when their jobs offer challenge, feedback, and recognition.

McClelland considers the need for achievement to be most critical to a nation's economic development. He held that a strong 'inner spirit' in individuals to attain is a measurable variable arising from a need, which the individual develops mainly in childhood and seeks to satisfy throughout his life. This 'inner spirit' which he called need for achievement, if higher, would produce more energetic entrepreneurs capable of generating rapid economic development. High need for achievement motivated an entrepreneur to take risks, work hard, find new things, save more, reinvest the savings in industry and so on. McClelland rated the nAch of different countries on the basis of ideas related to need for achievement contained in the children's stories. This has come to be known as *n*-factor rating. He established a correlation between *n*-factor rating and the prosperity of the countries a generation ahead. The criterion of n-factor rating was the inherent concern for achievement or the non-induced achievement motivation. McClelland found that that achievement motivation was lower among people of developing countries than those of developed countries. Even in U.S.A. only about ten per cent of the people were actually high achievers. It is the low level of aspirations or ambitions that explains the lack of enterprise in developing countries. John Kenneth Galbraith has also attributed the backwardness of many Asian and African countries to lack of ambition (Galbraith, 1969). Ambition is the lever of all motives and aimless life is a goal-less game. Ambitions motivate men, activise them broaden their vision and make life meaningful. It is the ambition that electrifies man's actions. However, ambitions differ from greed and windfall. Greed results in disaster and windfall makes one a speculator. The ambition

builds up achievement pressure in the individual and provides the basis for McClelland's *n* factor. Therefore, it is the duty of leaders and teachers to build up ambition into the minds of young people.

Need for Power

Power is one form of influencing people, which is very essential to get work done in every organization. Power is necessary to control and influence the behaviour of the subordinates and to achieve the goals of the organization. The man who is consciously concerned with the development of proper channels of influence is in a better position to contribute to organizational goals (McClelland, 1975). Power has the capacity to modify, to channelise and to persuade another person to do something. McClelland and Burnham (1976) have pointed out that entrepreneurs have high need for influencing others. McClelland viewed 'power' and 'leadership' concepts are closely related. He called the combination of moderate power, moderate social inhibition and low affiliation motive forces as the leadership motive pattern.

Need for power is a drive which, while dealing with people, influences and controls the behaviour of others. This motive is not necessarily conscious, nor does it always lead to a single behaviour or set of behaviours, for the reason that the behaviour that lead to power depends on the situation. The power motive does not refer to the general class of goals, outcomes or trends in the course of their behaviour. To a greater extent, one's basic nPow decides his style of leadership and its effectiveness. McClelland and his colleagues claim that need for power takes two forms: personalized and socialized. People with a high need for *personalized* powers enjoy their power for its own sake and use it to advance their career and other personal interests. They desire loyalty from others and gain satisfaction from conquering or dominating them. This contrasts with people who have a high need for *socialized* power. The latter seek power to help others, such as improving

society or increasing organizational effectiveness. People with a high need for socialized power want power, but they also have a strong sense of altruism and social responsibility. They are concerned about the consequences of their own actions on others.

Need for power seems to be important for entrepreneurs by the very nature of their jobs. Once an entrepreneur starts his enterprise, he has to play several managerial roles and also the role of a competitor to other businessmen. Hence it is desirable that he should possess at least a moderate level of power motivation. As power is viewed as the capacity to influence others' behaviour, it is apparently important for the determination of managerial success. Though power motivation is found to be desirable for an entrepreneur, how much power motivation is desirable to carry out his functions successfully is yet to be conclusively derived. The studies conducted so far obtained only conflicting results. Andrews (1967) found that a manager of the growing company has both nPow and high nAch whereas the manager of the stagnant company has nPow coupled with authoritative values.

Need for Affiliation

Atkinson et al. (1958) defines need for affiliation as "the establishment, maintenance or restoration of positive, effective relationship with other people". People with a strong nAff want to form positive relationships with others. They try to project a favourable image of themselves and take other steps to be liked by others. Individuals with a high affiliation motive strive for friendship, prefer cooperative situations rather than competitive ones, and desire relationships involving a high degree of mutual understanding. Unlike nAch which is more of an internalized need, nPow and nAff are primarily considerations for determining inter-personal behaviour. The latter two may have strong implications on management style. Although people with a high nAff are more effective in many jobs requiring social

interaction, they tend to be less effective at allocating scarce resources and making other decisions that potentially generate conflict. For example, research has found that executives with a high nAff tend to be indecisive and are perceived as less fair in the distribution of resources. Thus, people in these decision-making positions must have a relatively low need for affiliation so that their choices and actions are not biased by a personal need for approval.

Though little attention has been given to nAff motive in the study of entrepreneurship, the researches done so far had shown that entrepreneurs do not develop emotional bonds with people they work with. Their need for affiliation is low (Rao and Mehta, 1978) – more so because, if they establish emotional bonds, they are likely to end up working for people rather than their organization goals.

Interaction of nAch, nPow and nAff

The researches cited, have suggested that need achievement may help one to become an entrepreneur but need not be the only factor in making him, a successful one. The motives, attitudes and skills required to step into entrepreneurship need not be the same as those required of a successful manager. As entrepreneurs with high nAch are highly task oriented and work to their capacity they tend to expect others also to work to their capacity. As a result, they sometimes lack the human skills that are necessary for being an effective entrepreneur. Moreover, once an entrepreneur starts his enterprise, he has to play the role of a manager. He would have to increasingly deal with people, whether a small or large enterprise owner. McClelland and Burnham (1976) found that entrepreneurial manager should have a high need for influencing others (nPow), a low need to establish emotional relationships (nAff) and a high capacity to discipline one's own self.

A balanced motivational profile of nAch, nPow and nAff is required for an entrepreneur to be successful. In his study on executives from knitwear

factories, Kock (1965) found that successful executives had a balanced motivational profile with moderate nAch, nPow and nAff. Need for power is related to extreme risk taking behaviour, whereas the need for affiliation is related to the strategies of trying to avoid, that is, withdraw from competing inter-personal situations. In a study on agricultural entrepreneurs, Singh and Gupta (1977) found that apart from high need for achievement, the combination of moderate nPow and low nAff, or high nPow and moderate nAff was conducive to more farm output and growth than the combination of low nPow and high nAff or low nPow and moderate nAff. Thus, the motive patterns of an entrepreneur have definite effect on his success in business ventures.

Entrepreneurial motivation may be defined as a set of motives such as high need to achieve, moderate need for power and low affiliation motive which induce people to set up and run their own enterprises. McClelland argued that achievement, affiliation and power needs are learned rather than instinctive. Accordingly, he developed training programme that strengthen these needs. In his achievement-motivation programme, trainees review imaginative stories written by high- achievement-need people and then practice writing their own achievement-oriented stories. They practice achievement-oriented behavours in business games and examine whether being a high achiever is consistent with their self-image and career plans. Trainees also complete a detailed achievement plan for the next two years and form a reference group with other trainees to maintain their new-found achievement-motive style.

The Kakinada Experiment

Assuming need for achievement plays a vital role in promoting economic growth, McClelland has tried to induce achievement motivation in adults and provide them with an urge to improve their lot because uninduced achievement motivation results in long waiting before it bears fruit. For this

purpose, he conducted experiments with groups of businessmen in U.S.A., Mexico, and Bombay. Later he carried out a full-fledged programme in the Kakinada city of Andhra Pradesh. Kakinada is an industrial town in Andra Pradesh. The experiment started in January 1964. The main objective of the experiment was to break the barriers of limited aspirations by inducing achievement motivation. A total of fifty-two persons were selected from business and industrial community of the town. They were given an orientation programme at National Institute of Small Industry Extension Training (nisiet), Hyderabad. The participants were grouped into three batches. They were put under training for 3 months.

The training programme was designed in such a way that it could help the trainees improve imagination and enable them introspect their motivation. Accordingly, the programme included the following items in its syllabi:

1. The individuals strived to attain concrete and regular feedback.
2. The participants sought models of achievement to emulate.
3. The participants thought of success and accordingly set plans and goals.
4. The participants were encouraged to think and talk to themselves in a positive manner.

The impact of this training programme on the participants' behaviour was observed after two years. The observations were encouraging. It was found that those attended the programme performed better than those did not. The participants made more money, got promoted faster and expanded business faster (McClelland, 1966). In order to assess need for achievement, McClelland used the Thematic Apperception Test (TAT). In this TAT, ambition related pictures were displayed to the trainees and then they were asked to interpret the picture and what is happening in the picture. Thereafter, all the themes related to achievement were counted and, thus, the final score

represented one's need for achievement. McClelland reached to the conclusion that the training programme positively influenced the entrepreneurial behaviour of the participants. Significantly he found that caste, traditional beliefs or western ways of life did not determine the mental makeup of a participant.

That the need for achievement motivation can be developed more especially in younger minds is well supported by the cross-country experiments. For example, a 'Junior Achievement Programme' has been working for many years in the United States of America with a view to instil achievement motivation in the minds of younger generation. Similarly, in United Kingdom, 'Young Enterprises programme has been started with the same objective of inducing achievement motivation in younger minds.

The above said experiments/programmes have made us to realize that entrepreneurship is to be developed from a very young age. Accordingly, efforts have been made to develop entrepreneurship education and training in various streams of education that would result in a high need for achievement among students.

REVIEW OF LITERATURE ON ENTREPRENEURSHIP AND MOTIVATION

As the present inquiry is concerned with factors affecting entrepreneurial performance and motivation in a region, an attempt is made here to review the earlier studies on entrepreneurial motivation so that greater insight into the subject is obtained, and the bearings of the present study taken. A wide variety of research studies have been conducted by a number of scholars and institutions into the different aspects of entrepreneurship. While some studies examine the entrepreneurial profile and motivation. Some others emphasize the entrepreneurial performances and problems and still others have examined the role of different financial and promotional institutions in the development of

entrepreneurial talents. A majority of the studies on entrepreneurial development in India are, however, confined to small-scale industries sector. Some of the important studies pertaining to factors influencing entrepreneurial performance and motivation are summarized below.

In collaboration with the National Institute of Small Industry Extension Training, Hyderabad, David McClelland conducted entrepreneurial motivation training during 1964-65 at Kakinada in the State of Andra Pradesh and in Vellore in the State of Tamil Nadu (McClelland and Winter, 1969). The programme was an attempt to verify the behavioural theory that the Achievement Motivation a key factor in entrepreneurship can be developed. Besides, being compared with their own performance before and after attending the programme the participants were also compared to a matched control group. Analysis of the individual behaviour and economic efforts demonstrated that the participants showed significant improvements in many aspects of entrepreneurial performance, both as compared with themselves before the course and as compared with the matched control groups.

The success of the Kakinada Experiment gave rise to further experiments in India. During early 1970s in the State of Gujarat, an entrepreneurship training programme was jointly undertaken by the Gujarat Industrial Development Corporation and the Gujarat State Financial Corporation. One hundred and seventy four candidates selected from a diverse group in terms of experience, age, family and background were trained in four batches. The Programme has provided a regular supply of well-developed, better-informed entrepreneurs with viable projects to the sponsoring financial institution. In his evaluation of the programme, Patel found that 987 entrepreneurs have started industries with a capital ranging from Rs. 20000 to Rs. 2 crores up to the year 1976 (Patel, 1978).

M.A.Oommen (1972) examined the emerging patterns of entrepreneurship in the small-scale industry sector of Kerala by studying the origin and growth of firms in the light engineering industry and the impact of Government programmes like the industrial estates and rural industries project on entrepreneurship. His interesting findings are that ten out of forty five units are run by entrepreneurs from outside the State.

In his study, Sharma (1980) classified all the factors motivating the entrepreneurs into two types as follows:

1. **Internal Factors:** These included the following factors:
    (a) Desire to do something new
    (b) Educational background
    (c) Occupational background or experience
2. **External Factors:** These included:
    (a) Government assistance and support
    (b) Availability of labour and raw materials
    (c) Encouragement from big business houses
    (d) Promising demand for the product.

After analyzing the relative importance of the above factors, Prof. Sharma concluded that a vast majority of the new entrepreneurial class was prompted to enter industry mainly because of three factors: first, they had a strong desire to do something independent in life; second, they possessed technical knowledge or trading or manufacturing experience in the same or related line and third, governmental and institutional assistance available to those who would have, perhaps, otherwise not taken to entrepreneurial activity.

Manohar U. Deshpande (1982) made a survey of 90 small industrial units in the Marathawada region of Maharashtra in 1982. According to him, the policies of the government, the upper strata of society, social and political

leadership, occupational background, family aspirations, and general infrastructure are important factors which contribute to the emergence of entrepreneurship. His study also indicates that the emergence of entrepreneurship is not merely a psychological or socio-psychological phenomenon but it is also conditioned by the political milieu and the administrative system and the commitment to economic development.

N. Gangadhara Rao (1986) had made a detailed study of the small-scale units located in the industrial estates of coastal Andhra Pradesh. The study found that educational and income levels are important factors motivating entrepreneurship. Of all the ambitions, moneymaking is the major ambition of the entrepreneurs. Among the compelling reasons, dissatisfaction with the job held so far or the occupations so far pursued was rated the highest followed by making use of idle funds. Inherited property, technical and professional qualifications, and success stories of entrepreneurs were found to be significant among the facilitating factors.

While studying entrepreneurial motivation, Murthy et al. (1986) studied and classified the motivating factors on different bases. According to them, entrepreneurs are motivated to start business enterprise due to the following three types of factors:

1. Ambitious factors such as: (a) to make money (b) to continue family business (c) to secure self-employment (d) to gain social prestige (e) other ambitions –making of a decent living, self-employment of children, desire to do something creative etc.
2. Compelling factors such as: (a) unemployment (b) dissatisfaction with the job so far held or occupation pursed (c) make use of idle funds (d) make use of technical/ professional skills (e) others-maintenance of large families, revival of sick units started by father, etc.
3. Facilitating factors such as: (a) success stories of entrepreneurs (b) experience in the same or other line of activity (c) property inherited/

self-acquired/wife's (d) others – influence of family embers /relatives/ friends etc.

The study was conducted on 334 entrepreneurs in two coastal towns of Anakapalli and Gudivada of Andhra Pradesh. The ambitions of continuing family business and securing self-employment emerged as the most significant motivating factors. Making money and gaining social prestige were found to be insignificant.

P.N. Singh's (1986) study was based on some cases of successful entrepreneurs' aims at identifying factors for success and for developing entrepreneurship for economic growth in a country. He examines the social values related to entrepreneurship, importance of entrepreneurship in economic development, governmental efforts to encourage entrepreneurs, factors influencing entrepreneurship, and suggests a model for entrepreneurial development.

P.N. Misra (1987) has made an attempt to examine the role of the specialized financial institutions in generating and developing new entrepreneurship in India. It was observed that these institutions followed conservative policies till the 1960s resulting into further concentration of economic power in a small section of the society drawn exclusively from traditional business communities. They, however, changed their policies in the 1970s and introduced a package of new schemes to encourage entrepreneurs from different backgrounds to enter industry. This new thrust of policies and incentives created a favourable climate and the number of new entrepreneurs started swelling. Misra also examined the importance of different motivating forces by assigning weights on the basis of preferences given by the entrepreneurs. The study covered 125 manufacturing companies. It revealed occupational experience was accumulated by entrepreneurs either as business executives in industrial concerns, or as traders/ merchants, consultants, etc. in the related fields.

Occupational experience shows that the entrepreneurs had knowledge about the product, industry, and technology applied before promoting the present unit. Technically or professionally qualified entrepreneurs considered educational qualification as the main motivating factor.

Bhatia, B. S. and Sharma, P.K., (1989) surveyed 108 small entrepreneurs in the State of Punjab to find out the influence of various socio-economic variables on the performance of the enterprises. The study revealed that variables such as specific occupation, family background, technical education, caste, etc. had a positive influence on the performance of the enterprise. Finance was one of the important problems of the entrepreneurs and it was found that a majority of the entrepreneurs have not been benefited much from the support facilities of the State agencies because of their rigid procedures and insistence on adequate security cover for the loan.

In another study by Deolankar (1989) on motivational factors found that out of a sample of 264 small- scale entrepreneurs, 98 (37.12 percent) wanted to do something pioneering and innovative. For 74 (28.03 percent) entrepreneurs, the principal motivating factor was the desire to be free and independent. Those who were motivated due to bright demand prospects for the product accounted for 56 (21.21 percent). For 36 (13.64 percent), the main motivating factor to start enterprises was availability of sub-contracting facilities from large units.

Sadhak (1989) in his study on the role of entrepreneur in backward area found that monetary consideration was the most important motivating factor. Entrepreneurs motivated by income were mainly traders and salaried employees. Independent job was the main inspiration for salaried employees who were not satisfied with the work environment, nature of job, management style, etc. Self-advancement, social recognition, responsibility were other motivating factors.

Khanka (1990) studied 50 small-scale entrepreneurs in a notified backward region of the Kumaun division of Utter Pradesh regarding the emergence, performance, and problems of entrepreneurship. The findings are summed up in the table 2. 4

Table 2. 4: Factors Which Prompted the New Entrepreneurs to Enter Entrepreneurship

Factors	No. of Entrepreneurs
Factors Intrinsic to Entrepreneurs:	
1. Enterprising Attitude	7 (14)
2. Training/education in such kind of production	3 (6)
3. Previous experience in the same or related line	12 (24)
Factors Extrinsic to Entrepreneurs:	
1. Shortage of demand for product	10 (20)
2. Government and institutional assistance	9 (18)
3. Advice of business friends	4 (8)
4. Profit earned by friends in similar concern	2 (4)
5. Contact with others	2 (4)
6. Unsound units available at cheap price	1 (2)
Total	50 (100)

N.B. Figures in brackets denote percentages to total

Table 2. 4 reveals that one's previous experience gained in the same/ or related line has been the most motivating factor to plunge into industry. The next important factor that brought people to industry is heavy demand for the particular product in the market. Many individuals (18 per cent) are attracted by extrinsic factors as well, like Government assistance in one form or other.

Deepak Walokar's (2001) recent study of 192 women entrepreneurs in Nagapur city in Maharashtra stated that psychological motive is more predominant among entrepreneurs who are educationally more qualified,

while the economic motive is predominant among entrepreneurs who are educationally less qualified. This study also revealed that academic qualification, family relationships, monthly income from enterprise, participation in Entrepreneurship Development Programmes, membership of social/cultural organizations and business background of the entrepreneurs have a strong relationship with entrepreneurial success.

STUDIES ON RUBBER

There were so many studies were made relating to rubber production, processing, consumption and rubber industry in India and abroad. Although much literature is available on several aspects of rubber cultivation and other related areas, only limited studies are available pertained to the rubber-based industry in Kerala. This is primarily due to the fact that the emergence of the rubber- based industry as a major industry is of recent origin. Bauer (1948) made one of the earliest and comprehensive studies on rubber in 1948. The growth of the industry, distribution of area under rubber, establishment of international rubber regulation, plantation labours and prospects of the industry in the world were the main areas of his study. Schidrowitz and Dawson (1954) traced the history of the rubber industry in the world. They examined the origin of the industry, raw materials, scientific and technological developments in the rubber manufacturing industry in the world. An economic study of innovations in British rubber manufacturing was conducted by Donnithorne Audrey (1958). Stiefel (1975) has made an effort to study the efficiency of sheet rubber marketing system in Thailand in the framework of the structure- conduct- performance model from the field of industrial organization. This study indicates that government can make competition more workable by measures to increase the producers' bargaining strength to improve the efficiency of the capital market, to encourage standardization of product quality and by continuing to push feeder roads into remote producing areas to increase the size of effective markets. The supply

response of rubber in Thailand was analyzed by Dowling (1977). He concluded that the long run response is fairly elastic and is somewhat higher in the post-war period. However, the short run response is comparatively inelastic.

Kanbur and Morris (1980) have made an effort to study the measurement of cycles of prices of natural rubber. The main thrust of the study was to analyze the short-term fluctuations in natural rubber prices prevailing in the important markets of the world. The study revealed the existence of cycles of thirty months. Daud (1983) illustrates a statistical approach using Box and Jenkins technique to forecast RSS I and RSS II prices. The technique developed begins with a generalized forecasting model followed by model specification, namely, identification, estimation and diagnostic checking. Changes in the derived input demand and cost functions resulting from technological developments in the Malaysian rubber industry were quantitatively assessed by Lee, Longworth and Strong (Lee et al., 1983). The specific objective of the study was to determine the nature and magnitude of shift both in the derived input demand and cost functions associated with different levels of rubber growing technologies. The important indication of the results was the rate of reduction in unit cost of output resulting from the introduction of the recent high yielding technologies has been diminishing, given the existing factor prices.

Rubber smallholdings in China were the real attraction there. Chew (1984) had made an effort to measure the rate of technological change in Chinese rubber small holdings. In this study technological progress was estimated from a micro economic point of view. The study shows that the rate of technological progress in rubber smallholdings was the capital augmenting type at about 1.2 per cent per year. During the same period the world rubber scenario was focused by Tansuan (1984). He concluded a comprehensive study on the world rubber market structure and price stabilization. The main theme of

the study was the estimation of an econometric model of the world natural and synthetic rubber market to explain natural rubber price consumption share overtime. This study developed a model of the world rubber market with explicit treatment of the synthetic rubber industry and oil price, the later being a key variable about which there is great uncertainty and worry.

In Indian rubber scenario also there were a lot of studies. The marketing problems of rubber, particularly those of smallholdings, were examined by Reddy (1950), an officer of the former Madras Government in 1950 at the instance of the Rubber Board. The Plantation Enquiry Commission conducted a study in 1956 on the development of the rubber cultivation in India, capital structure, marketing of rubber, area under smallholdings and labour at the instance of the Government of India (Menon and Madhava, 1956). The Tariff Board and its successor, the Tariff Commission had made a number of studies in connection with the fixation of rubber prices (Day, 1951; Bhat, 1953; Pai, 1968). They had primarily deal with the cost of production of natural rubber. Government of India had appointed the Small Holding Economics Enquiry Committee to study the problems of the rubber plantation sector in 1967 (Abdullah, 1968). Although they had studied some general problems connected with the industry, the enquiry was mainly confined to the conditions of the small holders. Haridasan (1979) tried to find out the management practices followed in rubber estates in India. It also compared the practices followed in the estates belonging to Indian and non-Indian companies. Jose Thomas (1979) studied the economic position of the rubber smallholdings. It brings out graphically the differences between the estates and the holdings in such vital matters such as costs, price and profitability. National Council of Applied Economic Research has made an effort to assess the demand and supply prospects for rubber in the coming decade in India. The demand and supply balance worked out for each of the ten years also takes into account the additional rubber required to maintain the desired levels of stock (NCAER, 1980). Elsamma Job studied the economics of rubber

cultivation by smallholdings in Kottayam district. The cost of production per quintal of sheet rubber was estimated at Rs.305 at 1980-81 prices and the pay back period was in 9.5 years (Job, Elsamma, 1981). The short run and long run response of natural rubber to price movements was examined by Uma Devi (1989). She came to the conclusion that producers are influenced by the past six year's prices in their planting decision and that they positively responded to price. A study was done on rubber- based industrialization in Kerala by Tharian George K and Toms Joseph (1994). They examined various linkages associated with the rubber plantation industry and assessed its future scope and concluded that the potentials of various by-products of the industry like rubber wood, rubber seed and rubber honey should be exploited. Raju K.V. studied the capacity utilization of the individual rubber- based industrial units in Kerala. This study attempted to analyze the capacity utilization, productivity, problems and prospects of the rubber-based industry in Kerala (Raju, 1990). Kuriakose K.K. studied the marketing channels of natural rubber in Kerala. The study was designed to gather, record, analyze and critically evaluate data on natural rubber production, consumption and marketing in Kerala (Kuriakose, 1995). Based on detailed analysis of end- uses and using econometric modeling techniques Burger, Unny et.al derive relationships between demand for rubber and overall economic growth, between the share of natural rubber and the price ratio of natural and synthetic rubber and between the price of natural rubber and its supply (Burger, Unny et al., 1995). It is a pioneering effort towards better understanding of the dynamics of rubber industry and the industries dependent on it.

Thus the foregoing discussion reveals that though there are a number of studies on rubber, so far only limitted studies were available covering the entrepreneurship and motivational aspects of this strategic and growing industry. Hence an effort is being made in this study investigation to analyze the entrepreneurial aspects of the rubber goods manufacturing industry in Kerala.

CHAPTER III

STATUS OF SMALL BUSINESS SECTOR OF KERALA

Macroeconomic profile of Kerala

The State of Kerala is a small, narrow strip of land on the extreme south west coast of India. With a coastline of 590 Kms it does not exceed 100 Kms at its widest point. It has a total area of about 39000 sq. Kms. Constituted on November 1,1956 it comprises of the Malabar district in the North (which was till then part of Madras State), the whole of the former Cochin part of Travancore-Cochin state in the Centre and the major part of Travancore state in the South. While the first was directly administered by the British in the pre-Independence period, the last two had been princely states and hence under indirect colonial rule. Malabar inherited a relatively backward economy vis-à-vis the other two at the time of the State's formation (CDS, 1975). However, Malabar played a critical role in Kerala's development achievements through its numerous mass movements against economic and social oppressions as also the freedom movement from which emerged the left movement lessons from these were drawn by the other two regions. Statewide people's movements helped in a wider spread of the achievements (Ramachandran, 1996). At present the state is administratively divided into 14 districts, which in turn are divided into 152 blocks, 1384 villages, 991 grama (Village) Panchayats, 53 municipalities and 5 corporations.

In terms of its physical features, the land is divided into four distinct types: (i) the highlands touching the Western Ghats; (ii) the midlands. (iii) the low land plain; (iv) the coastal belt. It is fed by 44 rivers. The undulating topography of the state, the tropical climate (high incidence of sunlight rainfall and warm temperatures) as also the cool temperatures of the hills, generate a variety of agro-climatic conditions within a small spatial

entity, conducive for the growth of a range of crop species. The State has a fairly high proportion of area under spices, tea, coconut and rubber cultivation. The share of food crops in the total cultivated area, at about 30 percent, is one of the lowest in the country. Kerala ranks first in Human Development Index among the Indian States (Pillai, 1994). Kerala's population, according to 2001 census, is 31.8 million, which constitute 3.1 percent of the population of India. In Kerala, population growth has been declining in all the three decades from 1.78 percent in 1971-81 to 1.35 per cent in 1981-91 and further to 0.90 percent. Event of some unforeseen international development, foreign remittances from Keralites working abroad can shrink in the future. It is in this context that development economists question the feasibility of continuation of the 'Kerala Model' of development, and the discussion on industrialisation and entrepreneurship gained new momentum.

It has of course been pointed out that since income estimates refer to incomes originating in the region and do not take into account incomes accruing. Kerala State Domestic Product is under-estimated due to the non-inclusion of remittances received from Keralites working abroad. This inflow started growing substantially since the mid-seventies in the wake of the large-scale migration of Kerala workers to the Gulf Countries. That it made a quantum improvement to the standard of living in Kerala is evident from the anomalous situation of per capita consumption being higher than per capita income in certain years of the post-Gulf migration phase. However, the relatively higher consumption expenditure in the post-migration period did not seem to have had much impact on the commodity producing sectors of the economy which continued to grow much slower than the tertiary sector (Issac, 1993; Krishnan, 1994). The economy was unable to take full advantage of the growth in consumption expenditures despite a potential increase in productive capacity by way of savings generated from the remittance inflows. Most of the increase in investment that occurred was in housing. While this did open up a

major avenue of non-agricultural employment in rural areas in construction, it failed to generate adequate backward linkages in terms of manufacture of building materials. The above implied a growth in import dependence of the regional economy, the requirements being met almost entirely from other States (Issac et al., 1992). Hence potential employment opportunities, which could have been generated through the 'downstream effects' of the induction of remittance income, were largely lost. Hence it is evident that there is an urgent need to emphasis the development of domestic industrial production. It seeks to provide a rationale for a dispersed, small-scale industrial structure in Kerala.

At the macro level, the state faces the problems like (1) lower growth of State income, (2) weak productive sectors, (3) high level of unemployment, (4) lack of private initiative and investment, (5) large number of loss-making public sector units, (6) declining prices of commercial crops, and (7) deteriorating financial position.

The fairly high external orientation of the economy, with growing trade deficit on account of the increased import intensity since the mid-seventies and the vagaries of employment in the Gulf countries, renders the state fairly vulnerable to exogenous events. Though the state has been facing these problems for quite long time, it has not taken any significant reform measures, except the introduction of decentralisation of planning since 1996. While the Indian economy has already completed a decade of economic policy reforms, the state has not resorted to any liberalisation measures, perhaps overemphasising the role of public sector and taking the view that private capital is not the interests of the state. Recently, however, attempts are being made to convey that the state is not a verse to private capital and economic liberalisation measures will be implemented in tandem with the policies of neighbouring states.

Significant social and to a limited economic transformation could be achieved through the collective contribution of the specific characteristic of the Kerala economy. Strong public action responding to well uarticlated popular demands of deprived sections of the population, was a critical factor facilitating the process. As a consequence there was a broadening of the social-economic base of the economy, with no great disparities between rural and urban areas. While the highly commercialised agricultural sector generated considerable surpluses in the rural economy, the abolition of feudal landlordism and a radical redistribution of land deterred large concentrations of capital. Of course the plantation sector was exempt from the purview of land reforms; however, the fairly high incidence of cash crop production on smallholdings at least in the case of rubber, would have tended to narrow down the base for larger accumulation of capital. The early industrialisation process was largely determined by the plantation sector and development of the agro-processing industries.

Kerala's Industrial Backwardness

Kerala is proverbially an industrially backward state in the country, with low manufacturing activity. In Kerala 12817 joint stock companies were working as on 31-3-2003 which included 10909 private limited and 1408 public limited companies (Government of Kerala, 2003). The state has only 642 medium and large-scale industries, 19 are in Central sector, 63 in State sector, 16 in Co-operative sector, 29 in Joint sector and 115 in private sector (Government of Kerala, 2002). The state is still known for traditional industries like handloom, coir, cashew, handicrafts and beedi, which provide large-scale employment, especially to women. Most of these traditional industries are working on a cooperative basis with state support. These traditional industries are facing problems due to low productivity, low investment, poor management, scarcity of raw materials and marketing problems. Employment generation has been the primary objective of these

industries and as such often they were not commercially viable. In this context, the results of the Fourth Economic Census, 1998, relating to the unorganised sector (covering many of the above mentioned traditional industries) reveal that the rate of growth of enterprises in Kerala declined from 3.49 percent during the 1980's to 3.07 percent during the 1990s (till 1998). Similarly the growth rate of workers engaged in enterprises decelerated from 2.98 per unit to 1.99 percent, respectively, during this period (EPW Research Foundation, 2002). Only recently, the State could attract knowledge intensive industries such as software development, information technology, IT enabled services and telecommunication.

The sluggish growth of the manufacturing sector in Kerala in the post-independence period when the country was embarked on a path of rapid industrialisation and the state was under severe pressure to generate productive employment opportunities has drawn considerable attention in academic and official circles. While the explanation in terms of lack of minerals like coal and iron is recognised as inadequate, a number of other substantive explanations have been put forward. These are:

- Certain infrastructure bottlenecks such as railway transport and power and the absence of a concerted attempt to implement an attractive state industrial policy (Lokanathan, 1961);
- The widely held notion of the absence of industrial peace in Kerala, with an active trade union movement tending to push up wage costs in organised industry. Organised workers in the State had at one time shown a certain degree of militancy and consciousness of their rights in comparison with workers elsewhere who were relatively more docile and unorganised;
- The geographical remoteness of Kerala from the major business and industrial centres in the country results in certain disadvantages for the

state in planning for industries. For example, this implies the increasing of heavy costs for transportation of raw materials from outside the state or of finished goods from within the state to other parts of the country. The basic marketing problem that the state faces is on account of its geographical remoteness and the escalating freight costs;

- The concern of environmental issue is getting reflected in the development programmes of the state. There seems to be an inherent incompatibility between economic growth on the one side and environmental quality on the other (Sankaranarayanan and Karunakaran, 1985). Kerala is a state with the highest density of population for any part of the country. The settlement pattern of the people of the state is also very unique. The whole state is almost like a continuous village of independent and separate households with frequent towns and an occasional city interrupting the pattern. This makes the problem of environmental pollution of water, air or even noise, a really critical one for the state. The land, its fertility and the evergreen vegetation on it and the rivers and lagoons with their clean and clear water are some of the most valuable assets of the state. Nothing should be done to destroy or even disturb this beautiful balance of nature and life within the State;
- The energy situation is already in a precarious condition in the State. Industrialisation on a massive scale will certainly demand substantial augmentation of the energy production of the State;
- The industrial structure hypothesis. It is argued that the industrial backwardness of Kerala is related to its industrial structure characterised by a concentration of agro-based and processing industries with weak inter-industry linkages. It results in a process of cumulative causation that tends to keep the economy industrially backward (Subrahmanian and Pillai, 1994). The same study also persuasively demonstrates the inefficiency of the hypothesis regarding militant unionism and high wage

cost. It was found to be empirically unsubstantiated for the organised factory sector. However, that the relatively higher degree of political awareness among the workers in Kerala has impacted adversely on the small industry sector and more importantly, created a feeling among entrepreneurs of labour being difficult to manage cannot be denied. Hence the "psychic" cost of industrial location would be high in Kerala.

- Lack of industrial entrepreneurship both due to the scale of capital required as also existence of other more attractive projects promising quick and easy returns (Raj, 1994);

The present crisis in the Kerala economy has provided a golden opportunity to the state as a whole. It demands the government, the entrepreneurs and the people at large, to be more entrepreneurial in their approach. Remember, that the entrepreneurs always calculate risks, solve problems, and face them; they sense opportunities and do encash on them.

Nature of Industrial Entrepreneurship in Kerala

The economic activity in the beginning of the 20th century was primarily for export purposes given the channelisation of private foreign (colonial) capital into plantations and agro-processing industries like coir. Initially it was coffee and tea plantations and later rubber, resulting in an industrial structure which, as it evolved was very much determined by the initial intervention and dominance of European capital. In terms of total invested capital too, the plantation sector accounted for more than half, as late as the mid forties and it is only since then that there occurred a significant change in the Industrial Structure as reflected in the composition of invested capital. By 1946-47, for the first time, the share of manufacturing in the total invested capital exceeded that of the plantation sector due to the setting up of three relatively capital intensive modern industrial units. Since then there was an increase in investment in modern industries, most of which came to be

promoted by immigrant capital, as also a spurt in the plantation sector with the growing importance of rubber. Investment by local and other Indian capital was growing in the plantation sector particularly in rubber. Travancore emerged as the princely state with the highest total corporate paid up capital by 1947-48. However, the average capital of a company was the smallest suggestive to some extent of the relatively small size of capital in the region. (Mahadevan, 1988). It is interesting to note that a number of traditional industries, like coir, oil milling, tile making and cashew were being organised on a joint stock basis displaying considerable dynamism.

A series of reforms in relation to land holdings to augment revenue were initiated by the Travancore government under British paramountcy by the end of the eighteenth century. These measures created the necessary environment for investment in agriculture, enabling communities outside the Hindu caste hierarchy to acquire land and accumulate. This opened up opportunities for an indigenous entrepreneurial class to emerge by the 1920s. The communities were the Syrian Christians and backward castes like the Ezhavas in the south. However, given the fact that most cash crops like coconuts, pepper, ginger, arecanut and cardamom, unlike those grown largely on plantations like tea and coffee under European dominance, were to a significant extent raised on small holdings, the surpluses generated tended to be small (Isaac and Tharakan, 1986). Hence growth of indigenous capital was restrained by the initial narrower base for accumulation and the dominance of European capital in the plantation and agro-processing sector which constituted the first phase of industrial development in both the south and north of Kerala (Mahadevan, 1988; Menon, 1994). For instance, the capital structure of the early coir firms was rather small ranging from Rs. 20000-70000 in the 1920s and 30s. Compared with Rs.200000–500000 on an average in industrial firms in neighbouring Madras, around the same period, firms in Travancore were indeed small. With the introduction of natural rubber, local

capital entered more actively into the plantation sector and over time managed to consolidate its position. Most of these commercial crops were exported and hence external trade expanded very rapidly while food, that is rice, and also other manufactured goods were imported into Travancore and Malabar. To facilitate trade, the infrastructure in terms of port facilities and roads were developed connecting the highland to midlands and the coast. However, trade in plantation crops in the colonial period was almost entirely appropriated by European firms, those indigenous traders who persisted were reduced to acting as brokers and wholesalers of the foreign firms.

With the increase in international demand for the commercial crops, local entrepreneurs invested further in cultivation. Even the cultivation of rice was highly commercialised. Two sectors of commercial agriculture required high capital investment, large scale paddy cultivation on land reclaimed from the backwaters and plantation agriculture primarily in rubber in which indigenous capital got a foothold despite the dominance of European capital even as late as 1933 and managed to maintain its share of the area during the depression which affected the larger foreign plantations more adversely. And by the early 1940s some of the indigenous entrepreneurs were acquiring the holdings, which were being abandoned by British capital. While rubber cultivation had its start on a plantation scale by British planters, the greater part of the increase in area is attributable to Indian Capital, predominantly small holders who came into the field later. Some of the entrepreneurs were moving into agro-processing with surpluses earned in commercial agriculture. Coir and coconut mills in the south and handloom weaving and coconut oil mills in the north of Kerala. Two leading Syrian Christian business houses consolidated their gains from commercial farming by diversifying into banking and were able to make large profits which formed the basis of further diversification into insurance. Centres of commercial agriculture became centres of banking which expanded rapidly as a result of

sharp increase in prices of commercial crops and the subsequent increase in farmer's incomes (Epan, Mridul, 2001).

The rapid growth of commercial agriculture and a boom in the demand for its processed products was an incentive for the growth of a number of agro-processing industries, the first phase of industrial development. The most important were tea and coir, tile and brick making. However, machinery, equipment and fuel required for these industries were imported. The tea industry was in the nature of enclave development; inputs were mostly imported and output almost entirely exported. Industries linked to coconuts had greater impact on the indigenous economy and capital. Copra making, oil milling and coir industry was dispersed through the coastal and midland regions, coconut being a small holders produce; coir was spurred on by the trade boom in hard fibres in mid-19th century. Spinning was dispersed but coir weaving was more concentrated and primarily due to the large numbers employed in the bulk of the manufacturing work force, mostly women. Cashew appeared as a major industry only around the 1920s and grew rapidly in the forties. What is interesting is the export orientation of these industries even though there was a potential internal demand. These industries involved elementary processing and had a low technological basis, which meant very little linkage for the development of engineering industries.

The government also played a limited role in industrial development till about the mid-1930s and in fact appeared to be apathetic towards the setting up of large-scale industries in Travancore. Only since the mid 30s there was a change in Government policy in terms of active encouragement and incentives being given. The Government made direct investments too in industries in which private capital was not forthcoming or was inadequate. This change in policy did have an impact in terms of the emergence of a modern industrial sector, chemicals, rayon, aluminium and cement. There was a spurt of joint-stock company activity in Travancore and

its composition also changed. While the early phase of industrial development was characterised by a dominance of plantation and banking companies, the recent one was more in favour of manufacturing companies. Hence not only did the corporate sector expand rapidly in Travancore it also diversified toward modern industries by the late 40s. That it was not adequate to alter the employment structure which continued to be dominated by agro processing industries. Moreover indigenous capital did not play much of a role in the development of modern industry; most of it was initiated by capital from other states. While the plantation "boom" in the forties enabled considerable accretion of surplus with the indigenous Syrian Christian community, it is generally argued that its potential investment into industry was thwarted due to political reasons. The Syrian Christians who formed part of a political alliance against the upper caste state administration, viewed several policy measures taken by the administration as directed against them (Issac and Tharakan, 1986). However, this has been refuted on the basis of evidence, which shows the rapid growth of profitability of investment in rubber plantations, with increase in its prices since the mid-1930s. The amount invested in rubber planting companies between 1941-42 to 1946-47 increased more than four folds since the latter half of the 1930s. Together with other factors like the absence in Trvancore of institutional mechanisms for raising capital for industrial ventures and the uncertainty of the market for manufactured goods given the peculiar geographical location of the state, the response of indigenous capital to concentrate on plantations was in fact a rational one (Mahadevan, 1988). Nonetheless, there could have been a 'psychic' cost in terms of the political factor, which discouraged investment in industry by the Syrian Christians in Kerala.

There was some local capital investment in modern enterprises, primarily in the textile sector but the units were not very successful. However, the traditional industries showed considerable dynamism with a

substantial growth in their numbers and capital invested. The cashew industry, which began modestly in 1925, witnessed a spectacular growth in the 1940s, the later period saw the entry of a number of middlemen-traders. However, a few firms controlled the industry through a chain of factories. What is of significance in Travancore's modern industrial history is the role of immigrant capital during and after the Second World War with the entry of Gujarati and Tamil capital. The later had already been associated with some industries in Travancore like paper and sugar, which however had not met with much success. Some of the investments during the War were in rubber, plywood, and glass. Certain established business houses in fertilizers and chemicals, rayon and cement, which formed the bulk of the capital in modern industries.

However, in the post-independence period, there was another boom in plantation cultivation especially rubber during the Korean War and the withdrawal of European capital from the plantation sector also encouraged investment in plantations. Rubber plantations absorbed considerable investment funds of indigenous capital into trade, opportunities for which opened up after the exit of foreign companies. During the Second Five Year Plan period (1956-61) of the state no significant emphasis was given to modern industries due to the emphasis on traditional industries in Kerala as part of the policy of "walking on two legs". The possibility of state government's involvement in industrial development was severely constrained due to the loss of the elastic customs and excise revenue sources with its integration to the Indian Union. The inflow of immigrant capital also appeared to stop in the post-independence period.

From the above it appears that the following factors could possibly explain the tardy investment by indigenous capital into modern manufacturing in the post-independence period:

- The agrarian roots of indigenous entrepreneurship in Kerala, which created a tendency to consolidate existing position in the plantation sector due to favourable conditions in the decade of the fifties;
- Kerala's factory employment continued to be concentrated in resource based industries with only a small share of "footloose" type industries, which has resulted in the fragile industrial base. A significant proportion of their production was linked to export demand;
- The small size of indigenous capital whose rate of expansion was influenced by the industrial structure; and
- The failure of the Government to sustain its policy of active intervention and support to a process of industrial development of the state.

Since an important question one raise here is the extent to which small-scale industries can contribute to the advance of modern industry, the performance of the large factory sector alone does not present a complete picture. The traditional household and non-factory, small-scale modern manufacturing sectors have also to be considered.

Status of Small Business Sector in Indian Economy

The terms 'small industry', 'small enterprises' and 'small business' have been interchangeably used in the development literature of India. The definition of the Government of India, from time to time, determines the manner in which small industry is distinguished from the medium and large and the various components with in the small sector. 'Traditional and Village industries' are those which are registered and administered by various all-India Boards/Commissions through their developmental programmes, and are essentially commodity - specific. For instance there is an All India Handloom Board, All India Handicrafts Board, Central Silk Board, Coir Board and the Khadi and Village Industries Commission for the different traditional industries. Those activities, which are not concerned as above, are referred to

as modern Small Scale Industries (SSIs) governed by the All India Small–Scale Industries Board, and under the administrative control of the Small Industries Development Organisation (SIDO). The availability of data and information on small enterprises vary in different states of India, depending upon the administrative practices and the co-ordination of programmes at the lower level. However, for comparative purposes at the national level, there are a few sources of data: 1) the Annual Survey of Industries (ASI) carried out by the Central Statistical Organisation (CSO), covering factories registered under the Factories Act; 2) data available with the SIDO, based on basic registration statistics, specific sample surveys and the occasional Census of Small-Scale Industries; 3) the Population Census, which also provides some information on the manufacturing sector; 4) the Economic Census carried out by the CSO, which provides information on registered and unregistered economic activities;5) data on unorganised sector in manufacturing and repairs (other than under the Factories Act) generated by the Follow-up Rounds of the National Sample Survey Organisation (NSSO);and 6) SIDBI Report on Small-Scale Industries Sector by the Small Industries Development Bank of India.

Over the years, the Small Scale Industries (SSI) Sector in India has emerged as a dynamic and vibrant partner in the process of development by consistently recording higher levels of growth as compared to overall industrial growth. The sector can take the pride in nurturing of entrepreneurial talent and enabling the small sized units to graduate into medium and large-scale units. Supply-line from the sector covers wide spectrum of items ranging from fast moving consumer goods on the one hand, critical input sourcing to "sunrise" and large industries on the other. The process of liberalisation and emerging WTO regime have thrown open new challenges particularly for the SSI Sector. The process opens up opportunities to expand and grow for some while for others this poses a threat. In order to turn threats into opportunities and achieve self-generating expansion, the policies need to be growth oriented

enabling SSIs to face the competition. From the SSI point of view, the year 1999 was remarkable in the sense that appreciating the role of small enterprises in increasing the national wealth, the Government of India created a separate Ministry of Small Scale Industries, Agro and Rural Industries (SSI and ARI) under the Minister of State with an independent charge.

The Office of Development Commissioner (SSI), also known as the Small Industries Development Organisation (SIDO) is attached to the Ministry of SSI and ARI. SIDO set up in 1954 functions through a network of Small Industries Service Institute and its branches, Regional Testing Centres, Field Testing Stations, Tool Rooms, Central Footwear Training Institute, Production-cum-Process Development Centres and number of Training Institutes. SIDO is the nodal agency for implementation of Central Government policies and programmes, coordinating the programmes of State Governments, liaisoning with different State and Central Ministries, Planning Commission, Reserve Bank of India and financial institutions. In view of the opportunities emerging out of the World Trade Organisation Agreements and to help the SSI Sector in meeting challenges, a WTO cell has been established in the Office of Development Commissioner (SSI). Besides SIDO, there are other statutory Commissions/Boards like Khadi and Village Industries Commission, Coir Board, Silk Board etc. looking after the development of SSI, Cottage and Village sector units under their respective jurisdiction. At the State level, the Directorate of Industries implements the states specific policies for promotion and development, among others, of small- scale industries. While the central policies serve as a broad guiding force, each state evolves its own policy and package of incentives. Under the jurisdiction of State Directorate of Industries there are field offices viz District Industries Centres.

Evolution of the Definition of the SSIs

The official definition of SSI was first evolved in 1950 in terms of the size of gross investment in fixed assets (plant & machinery, land, building, etc.) as well as in terms of the strength of the workforce in the unit concerned. This criterion underwent several changes over a period of time. In the late fifties, a shift from a workforce-based definition was effected. In 1966, the original amount invested in plant & machinery was adopted as the sole norm for defining a unit as small- scale or otherwise. Other concepts, namely, ancillary and tiny units were introduced in 1960 and 1977, respectively. Industry-related/business-oriented service enterprises were classified for the first time as Small Scale Service Establishments (SSSEs) in 1985 and later, in 1991 re-defined as Small Scale Service & Business (industry related) Enterprises (SSSBEs). The Government in 1988 defined the term 'Women Entrepreneurs' Enterprise' indicating 51 percent equity held by women; the same was modified in 1991. An important feature of India's small-scale industry since independence has been the high level of protection accorded to this sector. The reservation policy was initiated in 1967 with 47 items which went upto 863 items in 1994. It has now only 675 items (Mathew, 2004). Periodic revisions in the definition of SSIs as made by the Government of India are furnished in Table.3.1

Table 3.1 Norms for Definitions of SSI

Norms for Definitions of SSI							
Year	SSI	ANC	TINY	EOU	SSSE	SSSBE	Remarks
1950	Gross investment in fixed assets: not exceeding Re.0.5 million	Did not exit	Did not exit	Did not exit	Did not exit	Did not exit	Employment less than 50 workers per day (with the use of power) or less than 100 workers per day (without the use of power)
1958	Gross investment in fixed assets: less than Re.0.5 million	-	-	-	-	-	Same as above, except that the criteria based on the employment 'per day' was henceforth replaced by a 'per shift' provision.
1959	Gross investment in fixed assets: value of machinery (original)	-	-	-	-	-	Same as above, except that the criteria based on the employment 'per day' was henceforth replaced by a 'per shift' provision.
1960	Gross investment in fixed assets: value up to Re.0.5 million	Value of gross fixed assets up to Re. 1 million	-	-	-	-	The employment condition was dropped from the definition
Original Value of Plant & Machinery Only							
1966	Up to Re. 0.75 million	Up to Re.1 million	-	-	-	-	-
1975	Up to Re. 1 million	Up to Re.1.5 million	-	-	-	-	-
1977	Up to Re. 1 million	Up to Re.1.5 million	Up to Reo.1million	-	-	-	Units located in rural areas/towns with a maximum population of 50,000(as per the 1971 Census)
1980	Up to Re. 2million	UptoRs.2.5 million	Up to Re.0.2million	-	-	-	Units located in rural areas/towns with a maximum population of 50000(as per the 1971 Census).
1985	Up to Rs. 3.5million	Up to Re.4.5 million	Up to Re.0.2million	-	Up to Re.0.2million	-	Units located in rural areas and towns with a maximum population of up to 0.5 million (as per the 1981 Census)
1991	Up to Rs. 6 million	Up to Rs.7.5 million	Up to Re0.5million	Up to Rs.7.5 million	(b)	Up to Re.0.5 million	@The location-specific condition was withdrawn, (b) The SSSEs classification was suspended in 1991 and replaced by the term 'SSSBEs'.
1997	Up to Rs. 30 million	Up to Rs .30 million	Up to Re.2.5million	Up to Rs.30 million	-	Up to Re.0.5 million	
1999	Up to R.10million	Up to Re. 10 million	Up to Rs.2.5million	Same as SSIs	-	Up to Re.0.5 million	

Notes: SSI-Small Scale Industry, ANC-Ancillary Industry, TINY-Tiny Unit, EOU-Export Oriented Unit, SSSE-Small Scale Service Establishment, SSSBE-Small Scale Service &Business (industry related) Enterprise.

Source: Ministry of Small Scale Industries, Agro and Rural Industries, Government of India.

The SSI sector in India covers a wide spectrum of industries categorised under small, ancillary, tiny, SSSBEs, women enterprise and cottage segments, ranging from small artisans/handicraft units on one end to modern production units with significant investments on the other. This sector has acquired a pre-eminent place in the socio-economic development of the country, as it acts as a 'nursery' for the development of entrepreneurial talent. The sector produces a wide range of about 7500 products. The term 'Small Scale Industry' evokes different meanings for different agencies that define SSIs. The Planning Commission, Government of India, for instance, considers the entire Village and Small Industries Sector (VSI) as the SSI sector. The National Sample Survey Organisation under the Central Statistical Organisation, Government of India, on its part, defines the entire industrial sector in terms of Organised and Unorganised segments, as well as in terms of industrial enterprises run by households and non-households. The Central Excise Department, on the other hand, identifies SSIs on the basis of the annual turnover of individual units. The Reserve Bank of India (RBI) adopts an expanded definition of SSIs, which includes traditional industries as well. The different segments of SSI have been broadly defined as under:

Small Scale Industrial Undertaking: Following the Abid Hussain Committee recommendations, the Government of India, vide Gazette Notification No. S.O. 857 (E) dated December 11, 1997 had raised the ceiling on investment in plant & machinery for SSI and Ancillary undertaking to Rs. 30 million. This definition of SSI and Ancillary undertaking has since been revised. As per the Government of India Notification No. S.O. 1288 (E) dated December 24, 1999, an industrial undertaking in which the investment in plant and machinery, whether held on ownership terms or on lease/hire-purchase basis does not exceed Rs 10 million is regarded as a small scale industrial undertaking.

Ancillary Industrial Undertaking: An industrial undertaking, which is engaged or is proposed to be engaged in the manufacture or production of parts, components, sub-assemblies, tooling or intermediates; or the rendering

of services is termed as an ancillary undertaking. The ancillary undertaking is required to supply or render or propose to supply not less than 50 per cent of its production or services, as the case may be, to one or more other industrial undertakings. The investment in plant and machinery, whether held on an ownership basis or on lease or on hire- purchase, should not exceed Rs.10 million as in the case of ancillary industrial undertakings.

Tiny Enterprise: A unit is treated as a tiny enterprise where the investment in plant and machinery does not exceed Rs.2.5 million, irrespective of the location of the unit. *Women Entrepreneurs' Enterprise:* Women Entrepreneurs' Enterprise termed as an SSI unit, industry-related service or business enterprise, managed by one or more women entrepreneur in proprietary concerns, or in which she/they individually or jointly have a share capital of not less than 51 per cent as partners/share holders/ directors of private limited company/ members of a co-operative society. *Small - Scale Service & Business {Industry Related) Enterprise (SSSBE):* An industry-related service/ business enterprise with investment up to Rs.0.5 million in fixed assets excluding land and building, is treated as an SSSBE. *Export Oriented Unit:* A unit with obligation to export at least 30 per cent its annual production by the end of the third year of commencement of production having an investment ceiling as prescribed for small scale undertakings, i.e., up to Rs10 million in plant and machinery, is termed export oriented SSI unit.

The definitional criteria of SSI closely linked to the question of ownership since SSI units cannot either be controlled or owned or be a subsidiary of any other industrial undertaking. This suggests that in the case of proprietary/partnership firms the combined investment of all units set up by the same proprietor/ partners should not exceed the total investment limit fixed for an SSI unit. The equity investment by other companies in SSI should not exceed 24 per cent of the total equity. The objectives of such changes in classification are aimed at: facilitating and boosting the growth of SSIs in the private sector; promoting SSIs within the framework of the social and

economic policies of the country; encouraging technology up gradation among existing units; helping technically qualified entrepreneurs to set up new units with advanced technology; improving product standards; creating opportunities for in–house R&D; and providing thrust to exports.

Various controls and regulations have been exercised over the small -scale industry sector in India under the Industries Development and Regulation Act (IDR Act), 1951 and other relevant statutes. The restriction on outside ownership is unique in the Indian context and has been introduced essentially to prevent large companies from obtaining fiscal and other concessions under the guise of setting up of SSI units as "fronts". Various controls and regulations are intended to prohibit the misuse of incentives by entrepreneurs and to discourage the practice of establishing more than one SSI unit, in the same line of production by the same set of entrepreneurs.

Small and Medium Enterprises in Other Countries

In India, there exists no separate definition of medium enterprises and as such no specific definition of small and medium enterprises. What prevails, in effect, is only the concept of small scale, ancillary and tiny industry which are classified according to the historical value of investment in plant & machinery. At the international level, the size of a unit in most of the countries is determined either by the number of workers employed and/or by a measure of assets (capitalization, sales, etc.). The general practice among countries to define the size of the unit (both in the manufacturing and services sectors) in terms of the number of employees, followed by asset size. In most of the Asian countries, units are defined in terms of the number of employees. On the basis of the employment criterion, a micro or very small unit is one that employs up to 19 workers; a small unit is one that employs between 20 to 100 workers; while units engaging between 101 and 500 workers are classified as medium-sized enterprises. The prevailing definitions in some Asian and other countries are listed in Table 3.2

Table 3.2: SMEs in Asian and other Countries

Country	Category of Industry	Criteria / Country's official definition
1. Canada	Manufacturing	Independent firms having <200 employees
2. China	SME	Depends on product group usually<100 employees; Investment ceiling 30 million Yuan (US$8 million)
3. France	SME	10-499 employees
4. Germany	SME	<500 employees
5. Indonesia	SME	<100 employees
6. Italy	Small Enterprises	<200 employees
7. Japan	Manufacturing Wholesale Trade Retail Trade and Services	<300 employees or asset capitalisation <100 million Yen <50employees or capitalisation <30million Yen <50 employees or capitalisation <10 million Yen
8. Korea	Manufacturing Services	>300 employees <20 employees
9. Netherlands	Small Enterprises Medium Enterprises	<10 employees 10-100 employees
10.Philippines	Small Enterprises	<200 employees, revenue <P 40 million.
11.Singapore	Manufacturing Services	<S$ 12 million fixed assets < 100 employees
12.Spain	Small Enterprises Medium Enterprises	< 200 employees <500 employees
13.Sweden	SME	Autonomous firms with <200 employees
14.Switzerland	SME	No fixed definition
15.Taiwan	SMEs SSEs	In manufacturing, mining and construction – invested capital is <NT$40 million or the number of regular employees not to exceed 200 In manufacturing, mining and construction – sales turnover <NT$120 million or regular employees to be <20
16.Thailand	Labour intensive sectors Capital intensive sectors	<200 employees <100 employees
17.United Kingdom	SME	No fixed definition
18.United States	Very Small Enterprises Small enterprises Medium enterprises	<20 employees 20-99 employees 100-499 employees
19.Vietnam	SME	No fixed definition, generally <200 employees
20.Mexico	Micro Small Medium	<15employees and gross Income/Sales <US$ 175,000. <15-99 employees and gross Income/Sales <US$175,000. 100-249 employees and gross Income/Sales <US$ 3,500,000.

Sources: 1. Handbook on Foreign Direct Investment by Small and Medium-sized Enterprises - Lessons from Asia, UNCTAD, Geneva, 1998.
2. Globalisation and Small and Medium Enterprises (SMEs) - Synthesis Report, OECD.

Small and Medium-sized Enterprises (SMEs) have come to play an increasing role in the industrial structure of developed and developing countries in Asia and other parts of the world with the result that a number of nations have witnessed successful SME-led economic growth and development. The growth-oriented SMEs (both in terms of domestic market share and direct exports), notably in leading economies of the Asia-Pacific viz. Japan, Taiwan, South Korea and Singapore have come to be identified as the driving force behind economic growth as witnessed in the eighties and nineties. The experience of small enterprise development in Asia indicates that small units working in product clusters generally tended to perform better than those operating individually. The better performance of enterprises through clustering was due to an easier access to networks as also on account of the benefits arising out of economies of agglomeration. In other words, enterprises in clusters are placed at a competitive advantage, as it is easier to gain information through product- specific and industry group-specific network on skill development, new technologies, new markets and opportunities for sub-contracting.

Much of the growth in output and in employment in the late eighties and early nineties in the leading Asian economies came from approximately 20-25 per cent of firms which were typically medium- sized (more than 100 employees) fast growing establishments. Smaller firms comprised the majority of establishments in these economies. A recent study published by the United Nations Conference on Trade and Development (UNCTAD, 1998) states that SMEs in these economies accounted for around 40 to 60 per cent of capital investment, employed over 60 per cent of the workforce, generated 50 per cent and 35 per cent of income and exports, respectively. This needs to be compared with the status of the small-scale sector and its contribution to GDP growth in the developing countries of Asia. Economic growth in countries like Indonesia and the Philippines has been

dominated by large firms (300-500 employees), as the same account for more than 65 per cent of output. The UNCTAD study also pointed out that establishments in the small industry sector tend to be concentrated in the informal, craft and agricultural sectors and face constraints of access to finance and managerial skills. Such firms, in Indonesia and the Philippines, contribute only 8 percent and 14 percent of output, respectively. The data indicate that these countries need a much larger SME base as well as stronger subcontracting linkages between small firms and larger firms. A study of the small-scale sector's contribution in Taiwan's economy demonstrates that the small business sector acts as an 'entrepreneurial growth engine' in economic development. In Malaysia, even though the small sector is yet to increase its share in output and employment from the existing level of 13.8 per cent and 17.4 per cent, respectively, per worker productivity has nevertheless, registered significant gains. Malaysian small industries have experienced substantial gains in productivity where the value added per employee grew at an annual rate of 6.4 per cent for the period from 1991 to 1996 (SIDBI, 2000).

Performance of SSI Sector

The Small Scale Industry Sector, as an important segment of the Indian economy, accounts for around 95 percent of the industrial units, 40 percent of the manufacturing sector output, 36 percent of exports and provides direct employment to 18 million persons in around 3.2 million registered SSI units in the country ((SIDBI, 2000)). The sector enjoys the pride of being second largest employer in the country. The sector has been receiving attention from the policy makers by way of support and incentives infrastructure facilities, technology, marketing and other similar measures. For providing financial assistance, a trement of "priority sector" was accorded to SSIs by the financial sector. Performance of the small- scale sector over the period 1993-94 to 2000-01 would be clear from the information contained in Table 3.3.

Table 3.3: Overall Performance of Small Scale Industry, 1993-94 to 2000-01

Year	No. of units (in million) as on 31st December	Output (Rs.crore)		Employment (in million)	Exports (at current prices) US $in Billion
		At current prices	At constant prices (1993-94)		
1993-94	2.39 (6.2)	241,648 (15.5)	241,648 (7.1)	13.94 (4.0)	8.07 -
1994-95	2.57 (7.5)	298,886 (23.7)	266,054 (10.1)	14.66 (5.2)	9.26 (14.8)
1995-96	2.66 (3.5)	362,656 (21.3)	296,385 (11.4)	15.26 (4.1)	10.90 (17.7)
1996-97	2.80 (5.3)	411,858 (13.6)	329,935 (11.3)	16.00 (4.8)	11.06 (1.5)
1997-98	2.94 (5.0)	462,641 (12.3)	357,749 (8.4)	16.72 (4.5)	11.96 (8.1)
1998-99	3.08 (4.8)	520,650 (12.5)	385,296 (7.7)	17.16 (2.6)	11.64 (-2.7)
1999-2000	3.21 (4.2)	5,72,887 (10.0)	4,16,736 (8.2)	17.85 (4.0)	12.51 (7.5)
2000-01	3.37 (5.0)	6,45,496 (12.7)	4,50,450 (8.1)	18.56 (4.0)	13.13 (5.0)

***Note*:** Figures in brackets give the increase over previous year

***Source*:** Economic Survey (2001-02), Government of India (Delhi, 2002) Table 7.15, p.181.

Growth in units and its share in industrial output

The number of small-scale units stood at 2.39 million in 1993-94 and this rose to 3.37 million in 2000-01. As far as output of small- scale units is concerned, it was Rs.2, 41,648 crore in 1993-94 and this rose considerable to Rs.6, 45,496 crore in 2000-01(at current prices). At constant (1993-94) prices, the output of the small-scale sector rose from Rs.2, 41,648 crore in 1993-94 to Rs.4, 50,450 crore in 2000-01. Out of the eight years given in the Table 3.3, the role of growth of output exceeded 10 percent in three years 1994-95, 1995-96 and 1996-97 (at constant prices). The higher rate of growth of the SSI sector has helped in pushing the growth rate of manufacturing as well as overall industry sector.

Employment generation

Small- scale industries sector in India is the second largest human power employer in the country, next only to agriculture. High employment generating potential of small enterprises is one of the most important aspects of the sector, as recognised worldwide. This feature gains added importance in a labour surplus economy like India. As is clear from Table 3.3, the small-scale units employed 13.94 million people in 1993-94 and this number has consistently risen to 18.56 million people in 2000-01. Within the manufacturing sector itself, small and decentralised sector contributes about four-fifths of manufacturing employment in India. As far as future prospects are concerned, the rural non-farm sector accounting for about 22 percent of rural employment can play a crucial role in the further expansion of employment opportunities in the rural areas. In the urban areas employment potential seems to be the largest in the non- household, tiny sector segment of the manufacturing sector.

Contribution to Exports

With the establishment of a large number of modern small-scale industries in the post-Independence period, the contribution of the small-scale sector in export earnings has increased by leaps and bound. What is heartening to observe is that the bulk of the exports of the small-scale industries consist of such non-traditional items like readymade garments, sports-goods, finished leather, leather products, woollen garments and knitwear, processed foods, chemicals and allied products, and a large number of engineering goods. The sales of the small-scale sector are estimated at approximately Rs.59700 crore ($13.13 billion) in 2000-01, which was 35 percent of direct exports in that year.

Efficiency of small-scale industries

A controversy has raged in this country over the issue of efficiency in the small-scale industries vis-à-vis large- scale industries. One of the earliest studies on the relative efficiency of small-scale industries in India was undertaken by Dhar and Lydall. They concluded that modern small-scale industry is fairly capital intensive: that is, these units do not generate more employment per unit of capital than large-scale industry (Dhar and Lydall, 1961). Similar conclusions were reached by Sandesara in a study conducted for the period1953-58. Sandesara used CMIE data for 28 industries and found that, for a given volume of investment, small-scale units neither generated more employment nor produced more output compared to large-scale units (Sandesara, 1969). However, there are some studies which prove the opposite and show that small-scale units are more efficient. The most important and most recent study on this issue was conducted in 1999 by the Small Industries Development Bank of India Team in association with National Council of Applied Economic Research (SIDBI, 2000). The analysis covers the Period 1980-96 using the aggregate Annual Survey of Industries (ASI) data. The import results of this study are given in table 3.5.

Labour and capital productivity are partial measures of efficiency. Labour productivity is measured as the net value added per employee. Similarly, capital productivity is measured as the net value added per unit of capital invested. The relative labour productivity of the SSI sector has been calculated by dividing the labour productivity of the SSI sector by the labour productivity of the large-scale sector. Relative capital productivity of the SSI sector has also been calculated in a similar manner. From the table 3.4, it is clear that the relative labour productivity of SSI sector, which is less than one, indicates that of the large scale sector, ie, the SSI sector is more employment intensive .The SSI sector employs as much as five times more workforce than the large scale sector for the same output (1996-97). On the other hand, the

relative capital productivity of SSI sector, which is more than one, shows that the capital productivity of SSI sector is higher than the capital productivity of the large –scale sector and total factory sector, ie, the large scale sector is more capital intensive. The capital input in large-scale sector is two times more than the SSI sector (1996-97). In a capital scarce and labour surplus economy like that of India, obviously SSI sector would be preferable to large scale sector, where-ever the overall cost difference is not substantial.

Table 3.4: Labour and Capital Productivity and Relative Productivity of SSI, Large–Scale and Total Factory Sector

Year	Labour Productivity*			Relative Labour Productivity (S/L)	Capital Productivity**			Relative Capital Productivity
	Small	Large	Total		Small	Large	Total	
1980-81	7814	20067	15462	0.39	0.48	0.23	0.25	2.09
1981-82	7696	23090	17168	0.33	0.49	0.25	0.28	1.92
1982-83	7917	24548	18231	0.32	0.52	0.26	0.28	2.01
1983-84	10384	27120	21075	0.38	0.59	0.28	0.31	2.12
1984-85	10099	25761	20488	0.39	0.59	0.27	0.30	2.19
1985-86	11118	29758	22267	0.37	0.59	0.28	0.31	2.12
1986-87	11189	31555	23723	0.35	0.59	0.28	0.31	2.09
1987-88	11106	31294	23618	0.35	0.56	0.26	0.29	2.12
1988-89	12282	35382	26489	0.35	0.55	0.28	0.31	1.95
1989-90	13014	38694	29003	0.34	0.67	0.30	0.33	2.27
1990-91	12721	41532	31420	0.31	0.62	0.30	0.32	2.11
1991-92	14958	39517	29721	0.38	0.65	0.27	0.31	2.41
1992-93	13016	46188	33116	0.28	0.61	0.29	0.31	2.09
1993-94	17065	52539	38845	0.32	0.69	0.30	0.33	2.28
1994-95	15882	55819	40942	0.28	0.65	0.30	0.33	2.16
1995-96	15334	59048	43899	0.26	0.54	0.31	0.33	1.75
1996-97	16390	59610	44341	0.27	0.59	0.29	0.31	2.02
Growth in Labour and Capital Productivity (CAGR %)								
1980-89	6.2	6.7	6.5		2.6	2.0	2.9	
1990-96	3.7	7.7	7.5		-1.6	1.0	0.4	
1980-96	5.0	7.0	6.7		1.3	1.3	1.1	

* Value Added in Rupees /per employee.

** Net Value Added per unit of capital invested.

Source: Annual Survey of Industries (various issues), Central Statistical Organisation, Government of India.

Sickness in the SSI Sector

The government in India recognised the importance of credit flow for the development of the small-scale sector and this was a major motivation for bank nationalisation, setting up of State Financial Corporations and Small industries Development Bank of India etc. The issue of non-performing assets has engaged continual attention of the financial institutions and all others concerned. The amount locked up in the sick SSI units has gradually gone up from around Rs. 2792 crore in 1991 to over Rs. 4313 crore in 1999. Status of sickness in SSI and Non-SSI units in terms of the number of units and amount outstanding for the period 1991-99 is presented below in Table 3 .5

Table 3. 5: Overall Industrial Sickness 1991-99 (Rs.Crore)

As at end of March	No. of Sick/Weak Units			Outstanding Amount (O/S)		
	Both SSI& Non-SSI	SSI	Non-SSI	Both SSI& Non-SSI	SSI	Non-SSI
1991	223,809	221,472	2,337	10768 (100.0)	2792 (25.9)	7976 (74.1)
1992	247924	245575	2349	11533 (100.0)	3101 (26.9)	8432 (73.1)
1993	240700	238176	2524	13134 (100.0)	3443 (26.2)	9691 (73.8)
1994	258952	256452	2500	13696 (100.0)	3680 (26.9)	10016 (73.1)
1995	271206	268815	2391	13739 (100.0)	3547 (25.8)	10192 (74.2)
1996	264750	262376	2374	13748 (100.0)	3722 (27.1)	10026 (72.9)
1997	237400	235032	2368	13787 (100.0)	3609 (26.2)	10178 (73.8)
1998	224012	221536	2476	15682 (100.0)	3857 (24.6)	11825 (75.4)
1999	309013	306221	2792	19464 (100.0)	4313 (22.2)	15151 (77.8)

Source: RBI Report on Trend and Progress of Banking in India, 2000-01

Third All-India Census of Small Scale Industries 2001- 02

The Third All India Census of Small Scale Industries 2001-02 was conducted during 2002- 03 and the quick results were published. The state-wise distribution of registered SSI units and working units as per the census is given in table 3.6. All the 23.06 lakh units permanently registered up to 31-3-2001 were surveyed, of which 14.38 lakh units (37.65 percent) were found to be closed. Tamil Nadu occupies the first position in the number of units registered followed by Uttar Pradesh and Kerala. In terms of working units five states namely, Uttar Pradesh (12 percent), Tamil Nadu (11.7percent), Gujarat (11.3percent), Kerala (10.5 percent), and Karnataka (9.1percent) had a cumulative share of 54.6 percent. With regard to closed units five states namely, Tamil Nadu (16.2 percent), Uttar Pradesh (13.4 percent), Kerala (8.4 percent), Madhya Pradesh (7.4 percent) and Maharashtra (7.1 percent) had a combined share of 52.5 percent. In terms of the total number of the registered SSI units in the country, Kerala is ranked as the third next only to Tamil Nadu and Upper Pradesh and in terms of the working units, Kerala's place is four next only to Upper Pradesh, Tamil Nadu and Gujarat.

Table 3. 6: State-wise Distribution of Registered SSI units, Working units and closed units as per the Third All India Census of Small-Scale Industries, 2001-02

Sl. No.	Name of State/ Union Territory	Registered SSI Units		Working Units		Closed Units	
		Number	Rank	Number	Rank	Number	Rank
1.	Jammu&Kashmir	39680	15	16699	16	22981	13
2.	Himachal Pradesh	17432	20	11092	19	6340	20
3.	Punjab	154686	7	71091	8	83595	3
4.	Chandgrah	2704	27	1366	27	1338	25
5.	Uttaranchal	27415	17	15907	17	11508	18
6.	Hariyana	67413	13	40215	12	27198	11
7.	Delhi	15740	21	9445	20	6295	21
8.	Rajasthan	84256	10	46378	11	37878	7
9.	Uttar Pradesh	289569	2	173269	1	116300	2
10.	Bihar	74491	11	53631	10	20860	14
11.	Sikkim	338	34	158	34	180	34
12.	Arunachal Pradesh	579	33	361	32	218	32
13.	Nagaland	698	32	503	31	195	33
14.	Manipur	5778	22	4746	22	1032	28
15.	Mizoram	4217	25	2890	23	1327	26
16.	Tripura	2039	28	995	28	1044	27
17.	Meghalaya	3768	26	2023	25	1745	24
18.	Assam	24947	18	14807	18	10140	19
19.	West Bengal	69269	12	40054	13	29215	10
20.	Jharkhand	33021	16	19399	15	13622	17
21.	Orissa	22324	19	6752	21	15572	16
22.	Chattisgarh	62979	14	36895	14	26084	12
23.	Madhya Pradesh	171376	5	107391	6	63985	5
24.	Gujarat	178261	4	161838	3	16423	15
25.	Daman & Diu	1505	29	937	29	568	30
26.	D& N Haveli	1135	31	333	33	802	29
27.	Maharashtra	137819	8	76378	7	61441	6
28.	Andhra Pradesh	102761	9	66269	9	36492	8
29.	Karnataka	165341	6	131247	5	34094	9
30.	Goa	4842	23	2039	24	2803	22
31.	Lakshadweep	84	35	68	35	16	35
32.	**Kerala**	**224524**	**3**	**151504**	**4**	**73020**	**4**
33.	Tamil Nadu	309162	1	168435	2	140727	1
34.	Pondicherry	4362	24	1827	26	2535	23
35.	A&N Islands	1210	30	762	30	448	31
	Total	**2305725**		**1437704**		**868021**	

Source: Quick results, Third All India Census of Small Scale Industries 2001-02, Government of India

Small is beautiful, so also is small-scale industry. The programme of modern small industry development in India is more than five decades old and is perhaps the most established of any developing country. Globalisation and World Trade Organisation regime has thrown up a number of challenges and opportunities, which need to be exploited by increasing small-scale sector.

Globalisation Challenges of the Small –Scale Industries

The general trade and industrial policies that India adopted till the 1990s insulated Indian industry from competition, domestic as well as foreign. Within this generally insulated market environment, small-scale units were further protected from competition from large-scale units through numerous protective measures. In addition, geographical and product market segmentation gave small-scale units isolated sheltered markets. The business environment has, however, changed drastically since the 1990s due to new economic policies. The radical shift in the Indian economic policies partly occurred due to its own macroeconomic crisis and partly as a consequence of the global trend.

The world over, the business environment has been changing fast. Three features of this change are of critical importance to industrial units. First, there has been a shift, during the past two decades in the economic policies of nations, especially developing nations, from 'policy regulation' to 'market orientation' exposing their industrial units to greater market competition. Second, globalisation in the sense of increasing integration of world economies is taking place, resulting in identifying the market competition. Thirdly, the past few decades have experienced rapid technological developments in numerous areas. All these developments have changed the methods of doing business drastically. We elaborate on these features in the Indian context and examine their implications for small-scale units.

The remarkable shift in the economic policies of many developing nations from 'state intervention' towards 'market orientation' was apparent from the early 1980s. In India, a major reform process has been under way since July 1991 to liberalise the regulations on domestic economic transactions. Some of these reforms are the abolition of licensing requirements for investments for a majority of industries, opening of hitherto reserved areas of public sector to the private sector, reduction in price controls, and reforms in capital markets. All these policy reforms are taking away the closed and assured markets of Indian industry, exposing it to greater market competition. Though the reforms are yet to touch the policies directly relating to the small-scale sector, new economic policies have already exposed this sector to market competition indirectly. For example, overall reduction in excise duties has automatically reduced the major benefit of the small-scale units, ie, excise duty exemption. Financial sector reforms have squeezed the benefits of lower interest rates, credit guarantee schemes and priority sector lending. Delicensing along with the reduction in price controls has taken away the special advantage of obtaining scarce raw materials at nominal prices. Feeling the pressure of competition, large-scale units are trying to expand their markets by getting into the lower end as well as rural segments of the product market for many consumer goods and thus opening the sheltered markets of small scale units created by the product and geographical market segmentation.

Globalisation whether taken in a limited way in terms of 'multilateral trade liberalisation' (Bhalla, 1996), or in the broader sense of increasing internationalisation of production, distribution and marketing of goods and services has resulted in the opening up of the markets leading to intense competition. For example, the World Trade Organisation (WTO) regulates multilateral trade requiring its member countries to remove import quotas and other import restrictions, and to reduce import tariffs. In addition,

countries, especially the developing countries, are asked to stop subsidies to exports as well as to domestic goods. Time limits are prescribed and strictly enforced by WTO in all these respects. India has to bring down its tariff rates, as per the GATT agreement, to 40 per cent for finished products and 25 per cent for intermediate goods. In addition, India has been asked to remove quantitative restrictions on imports by 2001 and all export subsidies by 2003.

As a result, every single individual enterprise in India, small or large, whether exporting or serving the domestic market, has to face competition. The process has already been initiated for small-scale units by placing 586 of the 812 reserved items on the Open General License (OGL) list of imports. This opens up the possibility of direct competition in the domestic market with the imports of high quality goods from developed countries and cheap products from the other less developed countries. Competition in the domestic market would further be intensified with the arrival of multinational companies as the restrictions on foreign direct investment has been removed. The 1990s have already witnessed the entry of many multinational companies in areas such as automobiles and electronics. In fact, in the electronics industry, where numerous small-scale units are engaged in the manual assembly of imported kits/ components of goods like tape recorders, have already been hit by the presence of multinationals such as Sony. To be able to compete with imports or multinational corporations in the domestic market or to export successfully without any external support, Indian industrial units, small and large, need to improve their productivity and quality, to reduce costs, to go for higher performance products and better services, all to be delivered simultaneously.

Equally important are the non-trade issues of WTO such as TRIMs, TRIPs, and the stringent sanitary, environment and labour standards. Some of the multilateral agreements on these issues like that of TRIMs intensify competition further and others either threaten to take away the comparative

advantage of Indian industries or to enhance the competitive advantages of new technologies. The agreement on Trade-Related Intellectual Property Rights (TRIPs) takes care of intellectual property rights by enforcing patent rights, copyright and related right, and the protection of industrial designs, trademarks, geographical indications, layout designs of integrated circuits and undisclosed information. Accordingly, the member nations are asked to modify their existing laws (WTO 1999). Once these laws come into force, unauthorised use of the patented innovations, or trademarks becomes difficult. It is of critical significance for Indian industrial units, as a majority of these units are involved in the unauthorised duplication of products without any formal technology transfers. The agreement on TRIPs is of special importance for food and chemical industries as units in some of these industries like pharmaceuticals have been producing patented products in the country through new processes. These units could do so till now given the Indian Patent Act 1970 that mainly takes into account the process patents for seven years and the capabilities of Indian industry to devise new processes quickly. It, however, will not be possible in future because India had to change its Patents with a long (20 years) period of protection as per the agreement on TRIPs. In effect, the enforcement of the TRIPs agreement makes the production of any product possible either through internal innovation or through formal transfer of technologies. This makes Indian industry dependent on multinational corporations, as these are the prime developers of a majority of products, which in turn involves costs in terms of purchase of technology as well as restrictions on the usage of purchased technology. Small-scale units are the most vulnerable as these units do not have the required resources and capabilities either for innovation or for purchase of technologies.

Similarly, the agreement on sanitary and phyto-sanitary (SPS) measures empowers countries to block imports from certain regions for reasons like spread of diseases. Under this, the US has already banned the

import of Indian beedies. Whatever be the status of the agreements on environment and labour standards, these have already been imposed on export units by the importing agencies. While the environment standards enhance the importance of new technologies labour standards, if implemented, remove the comparative advantage of having cheap labour for Indian industry, especially the small-scale sector. Increasing internationalisation of production, distribution and marketing of goods and services have given rise to global commodity chains. These chains are the networks of business units of various sizes beginning from the stage of raw materials supply to production, marketing and retail of any product being located across countries. These commodity chains can either be producer-driven or buyer-driven. Producer-driven commodity chains can be seen for capital and technology-intensive products like automobiles and electronics. In these chains, manufacturers of the final product are the major driving force. In contrast, buyer-driven commodity chains exist for products that are as such design and marketing intensive but labour-intensive in the manufacturing stage like that of textile garments and leather. Here, the retailers and brand merchandisers control the chains (Gereffi, 1995). The presence of global commodity chains makes it essential for the industrial units, to be a part of the chain in order to access the markets. So far, Indian industrial units, especially small units, are operating in isolation, which cannot continue any more. However, to get into the international production and trade networks, individual units have to satisfy the buyers' standards in terms of price, quality and delivery schedules

In sum, the process of globalisation is intensifying market competition by allowing imports and multinational corporations relatively easily into India. This in turn is creating pressures on industrial units to pay more attention to quality, price and delivery considerations rather than to profitability. All these require substantial improvements in technology, ie, transformation (mechanisation), organisation and information. Non-trade

issues of WTO such as environmental standards are further adding to the importance of new technology adoption. Simultaneously, multilateral agreements like TRIPs make industrial units in India largely dependent on multinational corporations for new technologies and in the process hike the cost of acquiring technology by controlling unauthorised imitations. This, coupled with the development of global commodity chains, makes it sensible for Indian units to have strategic alliances with other units of global commodity chains as it not only enables these units to have access to technologies but also to markets. Small industries should be willing to understand the direction of change taking place in the globalisation context and should adapt themselves to the changing situation rather than waiting for big markets and government supports.

Small Industry Performance in Kerala

It has generally been agreed among industry analysts, that the small industries sector of Kerala remains a "dark island". Data on the number of units registered each year. Since the seventies and the cumulative totals, are put out by the District Industries Centre (DIC), State Directorate of Industries. However the use of these data is limited for the following reasons:

- The figures do not take into account mortality of Small Scale Units, information on which is not available for each year in 1992-73 the year which the first all India census of registered units was undertaken, almost 40 percent of the units in Kerala were found to be closed (DCSSI, 1987-88). A survey conducted by the Directorate on Industries and Commerce, Government of Kerala on the registered small scale industrial undertakings as on March 31,1985 showed that almost 20 percent of the units were closed or sick (Government of Kerala, 1988). The Second all –India Census for 1987-88 revealed that 31 percent of the units were

closed. Another estimate for 1993-94 puts the proportion of sick and closed units at only 4 percent (Government of Kerala, 1995).

- There are still a proportion of the non-factory units that do not register with the DIC, the extent of which is not known.
- Thirdly, the adverse influences on data management are substantial, because the DICs have a dual role of administration as well as data collection.

Overview of the Small-Scale Units: 1972-73 and 1987-88 as Derived from the SIDO Data.

Two fairly comprehensive all India survey of the small-scale units falling under the purview of the Small Industries Development Organisation (SIDO), were undertaken on a census basis for the years 1972-73 and 1987-88 which have been examined in a study (Subrahmanian and Pillai,1994). Though not strictly comparable, these data were used to throw some light on the structure and growth of the modern small-scale units in Kerala vis-à-vis all-India. In 1987-88, the State contributed less than 5 percent to the total number of small scale units in the country as also of employment and even less in terms of value added or total production. A larger proportion of small units in Kerala are manufacturing units (60 percent, against 50 percent for all India) and 70 percent are located in rural areas compared to a much lower proportion, 42 percent, in India. The proportion of female-headed enterprises (14 percent) is higher in Kerala than all India (8 percent).

Table 3.7 gives a broad comparative picture of growth between 1972-73 and 1987-88 in Kerala and all India. While growth in the number of small-scale units has not been very different between Kerala and all-India, the rate of growth of employment was much higher for all India (5 percent compared to 2 percent for Kerala). Average size of a unit in terms of workers declined for both Kerala and India, but was sharper for the state. The average

size of a unit had declined in Kerala from 20 to 7 persons (for India it was from 10 to 6 persons). In terms of workers, size of unit was slightly larger in Kerala, which is also born out by the NSSO data. On the other hand, size of a unit in terms of investment in plant and machinery is smaller in Kerala. This implies that units are relatively more labour intensive in Kerala. Indicators such as value added and production grew at a much higher rate at the all India level.

The study by Subramaman and Pillai revealed that structural ratios like investment in plant and machinery per unit (at 1972-73 prices) and net value added per unit (at 1972-3 prices) had declined more sharply in Kerala than at the all India level while labour productivity registered an increase over the period in the case of both, it was higher for the country as a whole, in terms of production or output (at 1972-73 prices) the per unit value declined in Kerala but increased for the country.

Table 3.7

Growth of the Small-Scale Sector (SIDO units) in Kerala and All India – A Comparative Perspective: 1972-73 to 1987-88

Indicators	Kerala		% change 72-78	All Indi		All India 72-78
	1972-73	1987-88		1972-73	1987-88	
1. No. of units in census frame ('000)	11	38	245	258	987	282
2. No. of working units('000)	7	25	257	159	594	273
3. Employment ('000)	126	169	34	1650	3666	122
4. Investment in plant & machinery (Rs. million)	220	660	200	5370	17450	224
5. Production (Rs. million)	1160	3580	209	26030	135280	420
6. Value added (Rs. million)	360	710	97	8410	32300	284

Source : Complied from Subramanian &Pillai, 1994)

Notes: All financial values have been taken at 1972-73 prices using the all-India index of wholesale prices for manufactured products.

It is interesting to observe that capital productivity or the output capital ratio (defined as value of production divided by investment in plant and machinery) was higher in Kerala in the initial year compared to all India. However, it

increased much faster for the later (1972-73 prices) while the figure was almost stagnant for Kerala. Another striking difference between the state and the country in respect of the small-scale sector is to be noted. While the share of the smallest units (that is up to an investment of Rs.3 lakhs in plant and machinery) declined in terms of numerical strength with the larger units (Rs.3 lakhs and above) gaining in relative importance in the state and the country, in respect of production, the contribution of the larger units increased to over half of the output by 1987-88 at the all India level while the smaller units still accounted for over 60 percent of the output in Kerala.

Product Structure of the SIDO units

The product structure was examined by Subramanian and Pillai (1994) for the two time points at a two-digit level of disagregation in terms of value of output. Similar data were not available in terms of value added or employment for 1972-73. Growth between 1972-73 and 1987-88 was estimated by working out the latter figures at 1972-73 prices. While the output of different industry groups grew at varying rates and some industries such as food, wood, rubber and plastic products recorded higher than the all industry average growth rate, more than three-fourth of the total output in 1987-88 in Kerala was accounted for by 5 two digit groups, viz (1) food products, (2) wood products (3) rubber and plastics (4) chemicals and (5) metal products. These same 5 industry groups had also shared more than 75 percent of the total output in 1972-73. A comparison with the all India product structure brings out interesting differences. The all India pattern was much less concentrated in 1972-73. More than 75 percent of the output was shared by 9 industry groups the top three being metal products, chemicals and basic metals. While for India too, the pattern did not alter much by 1987-88, it was already more diversified. It is interesting to note that the share of food products is much lower for all India, 22 percent in 1987-88 (though it

registered an increase since 1972-73), compared to about 40 percent in Kerala (where in fact it declined from about 42 percent).

Table 3.8 Structure of the Small Scale Sector: Product Group Wise by Percentage share in Total Employment: SIDO units: 1987-88

Product group	SIDO units (Percentage share in total employment) 1987-88	
	Kerala	India
1. Food and beverages	27	15
	(51)	(80)
2 Garments, hosiery	4	6
	(16)	(40)
3. Wood products	14	6
	(41)	(33)
4. Leather products	*	2
		(28)
5 Non-metallic mineral products	13	12
	(55)	(120)
6 Rubber and plastic products	8	5
	(88)	(198)
7 Printing	7	5
	(67)	(136)
8 Chemicals &products	6	9
	(63)	(199)
9 Metals and products	9	16
	(56)	(119)
10 Machinery and parts	5	12
	(69)	(154)
11 Transport equipment	1	3
	(85)	(164)
12 Repair	5	5
	(32)	(20)
13 Miscellaneous industries	1	2
	(40)	(101)
14 Total	100	100
	(54)	(95)

Source: Compiled from Subramanian &Pillai (1994)

Notes: Figures in brackets indicate investment in plant and machinery per unit (in Rs.'ooo), which has been given for Total units.

The product structure of the small-scale sector in terms of employment (1987-88) is almost as concentrated in Kerala as in India (Table

3.8). About 70 percent of the employment is shared by 5 industry groups in Kerala (food products, wood products, non-metallic mineral products, metals and products and rubber/plastic products) and 6 industry groups of the all India level (metals and products, food products, machinery and parts, non-metallic mineral products, chemicals and products and wood products). However, what distinguishes the Kerala structure is the heavy concentration within these groups of agro and natural resource based industries. About 60 percent of employment was accounted for by the later while the proportion was about one third for all India. Overall it appears that the growth in the large-scale manufacturing sector in Kerala has been very sluggish in the eighties and its structure was characterised by a concentration of agro-based processing industries. The small-scale sector grew relatively fast since the later half of the eighties, however its structure too is centered on agro-natural resource based product groups. While its growth performance in the aggregate has been relatively poor, however, the increasing tendency in the output capital ratio in the recent period is an encouraging trend.

Economic Fundamentals of Small Scale Industries in Kerala during the era of Economic Reforms

As per official data there was a consistent rise in the total number of SSI units in the state from 73522 in 1990-91 to 2.70 lakhs in 2002-03 (Government of Kerala, 2004). The number of new units registered in a year rose from around 10,000 in the beginning of the 1990s to around 20,000 by the end of 1990s. In terms of number of units, there seems to be good progress in the area of SSIs. However, it has been pointed out that the rise in the number of units is on account of two unhealthy practices namely (1) high level of unemployment, due to which more people are attracted to the sector 'to start something' with government support and easy credit from banks without undertaking any real activity and (2) the target system followed for registration of as many units as possible by the Government to inflate the number of SSI units. Hence, the number of units registered does not reflect

the actual investment and production activity. The general view is that at least around one-third of the total number of units is either non-existent or sick. According to official data, there were only 5941 sick units in the state, which forms only 2.19 percent of the total number of units in 2002-03.

The share of the number of SSIs in Kerala in the total SSIs in India rose from 3.8 percent in 1990-91 to 11.11 percent in 2002-03. However, in terms of production, Kerala's share rose only marginally from 1.5 percent to 2.66 percent during this period. It could, therefore, be inferred that (1) there is some exaggeration in the total number of SSIs reported, and (2) SSI units in Kerala are relatively smaller units. It seems that the entrepreneurs are choosing the tiniest projects, perhaps due to labour problems in the state. Hence average employment per unit in the state at 4.6 persons was lower than the all India average of 5.5 persons. Similarly average value of production per unit in Kerala was only one fourth of average production at the at the all India level (in 2000-01, average production was Rs.4.6 lakhs per unit in Kerala against Rs.19.2 lakhs per unit at the all India level (Jeromi, 2003). On the other hand industry groups like metal and alloy, machinery and equipment and transport equipment have a very low share in Kerala at 14.9 percent as against 38.5 percent at the all India level. The structure of the industrial base in Kerala could be considered as lopsided or less diversified as it is still dominated by less prominent industry groups and lacks capital goods production (Subrahmanian and Azeez, 2000).

The cumulative number of SSI units registered in Kerala as on 31-3-2003 was 2.70 lakhs with an investment of Rs 3911 crores and providing employment to 12.15 lakhs. The total number of SSI units promoted by scheduled castes/scheduled tribes and women by March 2003 were 10643 and 49101 respectively (Government of Kerala, 2004). The performance of small-scale sector in India and Kerala for the last seven years is given in Table 3. 9

Table 3.9: Performance of Small Scale Sector

Year	All India			Kerala		
	Units (In Lakhs)	Production at current prices (Rs.Crores)	Employment (In Lakhs)	Units (In Lakhs)	Production at current Prices (Rs. Crores)	Employment (In Lakhs)
1996-97	28.57	412636	160.00	1.61	63308.11	8.40
1997-98	30.14	465171	167.20	1.80	7448.4	9.10
1998-99	31.21	527515	171.58	2.00	8604.42	9.81
1999-00	32.12	572887	178.00	2.20	9770.65	10.54
2000-01	33.70	645496	185.64	2.40	10998.25	11.14
2001-02	34.64	697522	192.00	2.58	12214.38	11.73
2002-03	35.72	760844	200.00	2.70	14083.72	12.16

Source : (1) *India 2003*-Ministry of Information &Broadcasting, Government of India

(2) Government of Kerala, 2004, *Economic Review,* State Planning Board, , Thiruvanthapuram.

The district-wise details of registered SSI units in Kerala as on 31st march 2003 are given in the Table 3.10. An analysis of the district-wise performance reveals that Ernakulam district ranked first with a total 35183 registered units followed by Thiruvanthapuram with 28918 units and Trissur with 28272 units as on 31 st March 2003. The percentage share of the category of entrepreneurs promoted SSI units shows that the General category constitutes 78 per cent, Women 18 per cent, and Scheduled Caste and Scheduled Tribe constitute only 4 per cent as shown in figure 3.1.

Fig 3.1 Category of entrepreneurs promoted SSI units

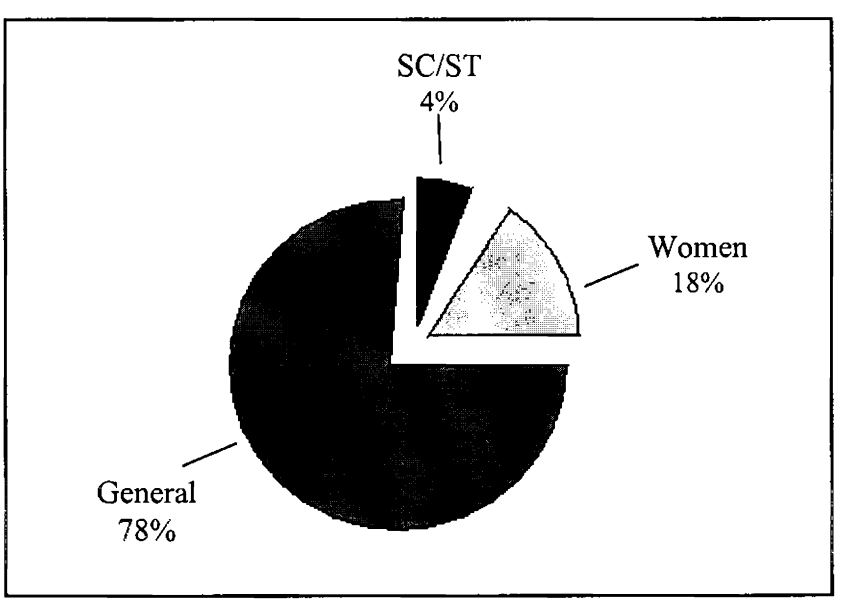


Table 3.10 District-wise Details of Small-Scale Industrial Units Registered in Kerala as on 31st March 2003

District	Number of SSI units promoted by						
	SC/ST	Women	Others	Total	Total Investment (Rs. In Lakhs)	Value of goods and services produced (Rs. In lakhs)	Employment provided (Number)
1	2	3	4	5	6	7	8
Thiruvananthapuram	1323	6065	21530	28918	32626.58	111356.6	11486
Kollam	1867	6208	18082	26157	33360.59	82645.89	167751
Pathanamthitta	748	2748	9616	13112	11978.4	26629.49	43999
Alappuzha	760	5297	18434	24491	26912.3	100125.78	112768
Kottayam	**580**	**4555**	**22606**	**27741**	**31534.1**	**69863.64**	**91242**
Idukki	458	2335	4288	7081	8821.48	25608.75	24976
Ernakulam	**855**	**5007**	**29321**	**35183**	**87225.54**	**481061.7**	**164356**
Trissur	1205	4226	22841	28272	52880.04	158061.7	114594
Palakkad	708	3878	16930	21516	30664.02	58832.09	9967.1
Malappuram	875	1880	9969	12724	20530.13	74285.49	50563
Kozhikode	453	2753	16689	19895	21531.36	85510.42	83694
Wayanad	308	1639	2605	4552	5194.33	10630.77	16613
Kannur	338	1646	11796	13780	19430.33	101044.86	92223278
Kasaragod	165	864	5893	6922	8429.33	22715.51	37741
Total	**10643**	**49101**	**210600**	**270344**	**391118.53**	**1408372.69**	**1215532**

Sources: 1.Directorate of Industries & Commerce, Government of Kerala, Thiruvanthapuram.

2. Government of Kerala (2004): *EconomicReview* 2003, State Planning Board, Thiruvanthapuram.

There are several misconceptions on the performance of SSI Units in Kerala (ISED, 2001). These largely relate to high sickness, lack of growth, low employment level etc. These, in fact, are some symptoms rather than the disease per se. The major problem relates to task of a mechanism to identify these problems in the right time and to do the needful. Not all enterprises grow and not all enterprises strive after growth in the sense of employment growth. For many entrepreneurs, the goal is not to grow, but on the contrary, to maintain a traditional way of life or work. Many of the arguments against the private sector of Kerala's small industry do not fall in live with the international and national experience. The private sector has its contribution to

industrialisation of the state. But, Government, so far, has not appreciated this role and has not provided a suitable policy environment for its development. On the other hand, policy intervention so far has virtually created a cadre of dependent entrepreneurs. It is a change from the culture of dependent entrepreneurship that a new policy regime should aim at. Revival of the industrial sector hinges on labour reforms, adequate power supply, good infrastructure facilitates and private investment.

In the context of the liberalisation policy specific strategies have to be formulated to ensure collective efficiency in the small-scale sector. This should go beyond space clustering, which was attempted earlier on the basis of industrial estates and parks. The emphasis has to be on modernising the sector so that level of operations is increased substantially. Two major suggestions, which could be made in this regard would be 1) establishment of a technology incubation centre to make available the latest technologies to prospective entrepreneurs and 2) setting up of district and state level marketing societies with networks at the Block and Panchayat levels. The creation of a Small Enterprises Commission to articulate a co-ordinated approach towards networking of enterprises and ensuring inter-industry co-operation also deserves serious consideration. The need for an apex body for monitoring the Entrepreneurship Development Programmes (EDPs) of the state, suggesting specific thrust areas like product and process oriented EDPs, entrepreneurial clubs etc have also been highlighted. Establishment of an early warning system for sickness prevention is another thrust area. (Government of Kerala, 2002). Of late, there is a clear change in the investment climate in the State following economic reform measures and efforts are on to boost the level of private investment. The State Government has taken a number of measures like announcing new industrial, information technology and labour policies, organising Global Investor Meet (GIM), Business to Business Meet, promoting tourism etc. for encouraging investment.

CHAPTER IV

RUBBER INDUSTRY –AN OVERVIEW

Evolution of Natural and Synthetic Rubber

The term 'rubber' encompasses not only the natural product that yields from the tree *Hevea brasiliensis*, and other vegitive sources but also the ever-increasing variety of synthetic polymers having properties similar to natural rubber. Natural rubber, one of the most valued raw materials, was known to man from very old times. There is evidence that rubber was used at an early period in Ethiopia for making play balls and other objects. From Ethiopia a ball game spread to Egypt and then to Lydians to whom Herodotus attributed its invention (Schidrowitz, 1952). Although the great bulk of modern supplies are derived from plantations of *Hevea brasiliensis*, rubber is present in a variety of trees. The name rubber is derived from the quality of the material in rubbing black lead pencil marks out of paper. Joseph Priestly, the British Chemist and the discoverer of oxygen is said to have used rubber for this purpose (Schidrowitz, 1952). In 1878 Sir Henry A. Wickham (Fig. 4.1), defying Brazilian law, removed thousands of seedlings from the Amazon area and planted them in Ceylon. From there the cultivation spread to Southern India and the South East Asian Countries which today hold a virtual monopoly of natural rubber. Physically, natural rubber (NR) is a material that possesses properties of plasticity, resistance to electricity, adhesiveness and elasticity. Chemically, NR is a high-molecular weight terpene hydrocarbon polymer.

The high price of natural rubber in the rubber boom of 1908-10 provides the impetus for the attempt to provide a synthetic substitute for the natural material (Audrey, Donnithorne 1958). The Second World War provided a massive incentive to developments in synthetic rubber by cutting off the world from South East Asia .The lead in this search was taken by the United States of America, whose efforts have had remarkable success. Today

the output of synthetic rubber has assumed dynamic proportions. A wide range of synthetic rubbers of different types is now being produced all over the world. The conventional raw materials required for manufacturing of synthetic rubber are petrochemicals. Now synthetic rubber competes with natural rubber in the crucial field of tyre manufacturing also. In fact, 95 per cent of the total consumption of rubber in USA is synthetic rubbers. However, the cost of production of synthetic rubber in India remains the highest because the raw materials used are not the conventional petrochemicals, but alcohol and benzene. Alcohol is produced from molasses and benzene from steel industry. Contrary to NR, synthetic rubber (SR) has no specific chemical or technical connotation; it usually refers to a high-molecular weight polymers, having physical properties similar to NR. During the second half of the 20^{th} century, different varieties and sub-varieties of SR were developed. These have undergone substantial changes.

Genesis of the Rubber Manufacturing Industry

Although man knew natural rubber from very old times its industrial use has developed only after the 19^{th} century. The work of the Frenchmen Harrissant and Macgner served to create more attention to the industrial uses of rubber in 1763 (Schidrowitz, 1952). The first use of rubber was discovered in 1770, ie, it could erase lead pencil marks. This created a lot of interest in rubber. The greatest name among the early British pioneers in the rubber industry is that of Thomas Hancock (Fig. 4.2), rightly regarded as the father of the industry in Britain. During the period 1819 to 1826 Hancock invented a lot of products based on rubber (Audrey, Donnithorne, 1958). The discovery of mastication by Hancock to produce rubber in cylindrical form and subsequently as blocks of rubber in desired size and shape In 1820, Hancock invented the hand-driven wooden masticator which was replaced horse-driven machine in the very next year and was soon transformed into steam-driven metal machines. Addition of fillers to rubber, compression

moulding under heat, cutting solution dipping and latex thread technology, etc. were some of the patents added to Hancock's list by 1825. Hancock's company, James Lyn Hancock Ltd, was the first British rubber manufacturing concern founded in 1820.

Rubber manufacturing in America was started during 1830 for the production of shoes in 1836, E.M.Chaffee of Roxbury Rubber Company patented calender as a device to produce rubber sheet of uniform thickness without using solvents. Later in 1845 H.Bewley devised the extruder for producing articles in continuous length of uniform cross-section as with tubing, hoses, cable covering, etc. The machine originally designed for gutta-percha was subsequently modified by Shaw, Royle and others for the rubber industry (Pickles, 1958). By mid-1830s there was a flourishing rubber-manufacturing industry in Britain and North America, but all the products ranging from domestic and sport articles to surgical, mechanical and engineering goods were unvulcanized. The technical base for large-scale industrial uses of rubber was established in 1839 when Charles Goodyear (Fig. 4.3), an American hardware merchant turned rubber manufacturer, discovered the method of vulcanisation. It is a process of heating rubber with sulphur at a high temperature to improve its strength properties. The discovery marked the beginning of widespread use and applications of rubber. This started an era of experimentation and today rubber is man's one of the most versatile servants.

The most spectacular development in the annals of rubber was the invention of pneumatic tyres. The first pneumatic tyre patented in 1845 by Robert William Thomson (1822-1873), a Scottish engineer, did not achieve commercial success. After 43 years, in 1888, John Boyd Dunlop (1840-1921), a veterinary surgeon from Belfast, reinvented and patented pneumatic tyre (Tompkins, 1981). The Dunlop Company produced the first car tyre in 1910. Aircraft tyre was first marketed around 1910 and first truck tyre in 1917.

The earliest beginning connected with rubber manufacture would have been associated with the names of Goodyear and Hancock, the two geniuses who foresaw the potentialities of rubber and initiated the manufacture of rubber products. This led to the vast industry operating throughout the world today, providing so much the comfort and security of humankind. Later, in the second half of the 19^{th} century and during the beginning of the 20^{th} century, a number of rubber manufacturing units were established in Great Britain. The total number of rubber manufacturing companies in the world runs into many hundreds, of which a high proportion is in USA. The industry showed such phenomenal growth in the USA that by 1922 that country accounted for almost three quarters of the world consumption of rubber. This situation has changed only after other countries increasingly took up tyre production. The two World Wars took rubber industry into new dimensions. Numerous products based on rubber were invented during these periods (Bauer, 1978). After the 1950s rubber industry has developed substantially. Rubber-based industries were established in the producing countries also in a large scale during this period.

Plantation rubber industry

During 1850s, most of the rubber for the world rubber industry came from *Hevea, Ficus elastica and Castilla elastica* that grew wild in the forests of Central and South America, India and Africa. The flourishing rubber industry in Britain found it difficult to sustain itself with the limited supply of wild rubber from Tropical America. With the growing demand due to rapid growth, the rubber manufacturing industry in Europe and America had to widen the source of supply of their raw material, which stimulated the search for rubber world over. Hancock suggested the initiation of rubber cultivation in the East not only as a profitable plantation venture, but also as an insurance against interruption of supply. Thus, the colonial powers initiated a scheme for introducing rubber as a wonderful plantation agricultural crop in the South

East Asia to feed the industries located in the metropolitan centres of Europe. Systematic cultivation and tapping of the plantations in the South and Southeast Asian countries began after 1922. The period from 1923 to 1934 was one of the quick growing phases of the rubber-producing industry in the Asian countries. After the Second World War the Asian rubber industry received a boost and by 1955, the total NR production in the Asian countries touched 1.82 million tonnes (Asia Rubber Handbook Directory, 2003). The growth of plantation in South East Asia was favoured by rapid development in the transportation sector such as railways and steamships and the opening up of the Suez Canal. Natural rubber production has continued to increase since 1985 and the production figures of rubber from 1990 to 2000 reported by the International Rubber Study Group are given in Table IV.1

Table 4. 1: NR production in the important NR producing countries in Asia ('000tonnes)

Country	1990	1995	2000
Thailand	1,275	1805	2346
Indonesia	1,262	1455	1501
Malaysia	1291	1089	615
India	324	500	629
China	264	424	445
Vietnam	103	154	291
Sri Lanka	113	106	88
Philippines	61	60	67

Source: *Asian Rubber Handbook Directory, 2003*, Dhanam Publications (Pvt) Ltd, Cochin, p.158.

Owing to its amazing multiplicity of uses, rubber has now become the base material for manufacturing an incredible variety of products. The sectors producing these different products, the plantations/factories producing new rubber and the industries making machinery, equipment and additives used with rubber etc. have made rubber industry the second largest in the world, next to iron and steel.

Indian Rubber Industry: An overview

The rubber industry at present consists of 6 major sectors, namely the Natural Rubber (NR) producing sector, the Synthetic Rubber (SR) producing sector, reclaimed rubber manufacturing, the rubber products manufacturing sector, the machinery segment and the rubber chemicals manufacturing sector. The total annual turnover of the Industry is about Rs 250,000 million giving direct employment to 1.5 million people. The Indian rubber industry has entered the 21st century with tremendous growth prospects. Vast internal market, rapid industrialisation, improved living standard of the masses and availability of almost all types of raw materials from within the country and the emergence of Information Technology revolution have been responsible for the phenomenal growth of the industry. By 2000-01 India had emerged as the fourth largest manufacturer of natural and synthetic rubber products in the world. The key indicators of the present Indian rubber industry are given in Table 4.2

Table 4. 2 Key Indicators of the Indian Rubber Industry (2001-2002)

Parameter	Indicator (Approx.)
1) Annual turnover (inRupees)	250,000 million
2) Revenue to Government Exchequer (in Rs.)	40,000 million
3) Value of products Exported (in Rs)	21,530 million
4) Rubber production	
Natural rubber (MT)	631,400
Synthetic rubber (MT)	69,653
Reclaimed rubber production (MT)	63,550
5) Rubber consumption	
Natural rubber Synthetic rubber in MT	812,740
Synthetic rubber consumption (MT)	174,540
Reclaimed rubber consumption (MT)	63875
6) Product range	35,000
7) Annual growth rate	8
8) Per capita consumption of new rubber	0.8 kg.
9) Industry structure	
NR growers (in number)	1 million
Tyre factories (in number)	32
Medium scale goods manufacturers	300
Small- scale units	4,700
10) Employment generation (in million)	1.5

Source: *Rubber Asia,* March-April 2003, Dhanam Publications (Pvt) Ltd., Cochin, p.51.

Some important factors favouring the Indian Rubber Industry are:

- availability of trained labour at wages that are only a fraction of those prevailing in advanced countries.
- adequate supply of trained engineers, chemists and technologists to man the industry at competitive costs.
- a rich, indigenous resource base of entrepreneurial talent which has already taken annual rubber consumption figures from 1000 tonnes to nearly 1 million tonnes in a period of fifty years and established a sturdy start for export of quality rubber goods all over the world.
- a prosperous and growing population of one billion people, which offers a ready market for quality products, manufactured at competitive costs.

Indian rubber plantation industry

Long before the introduction of the Para (*Hevea*) rubber tree to India and other South East Asian countries, indigenous rubber yielding trees (Assam Rubber) were tapped on a commercial scale in Assam. William Roxburgh, keeper of the Calcutta Botanic Gardens in 1798, identified the trees as *Ficus elastica*. The real initiative for the historic domestication of Para rubber in the East came from Sir Clements Robert Markham (Fig. 4.4) of the India Office in London, who is credited with the adventurous and successful transfer of cinchona plants from Peru to India during the 1860s (Willams, 1962).

Fig. 4.1 Henry A. Wickham (1846-1928)

Fig. 4.2 Thomas Hancock (1786-1865)

Fig. 4.3 Charles Goodyear (1800-1860)

Fig. 4.4 Clements R. Markham (1830-1916)

The growth of the Indian rubber plantation industry has been mainly through the expansion of rubber cultivation in Kerala. The plantation history of the region started with coffee and cardamom plantations and then moved into tea and finally rubber. The geographical and agro climatic suitability proved congenial for rubber cultivation in Kerala. The cultivation of rubber in India actually started in 1878 from the rooted cuttings imported from Royal Botanic Gardens, Heneratgoda, Ceylon (Dean, 1987). The first attempt was to introduce rubber as a forest crop in the teak plantations of Nilambur valley under the Forest Department of the Government of Madras. On behalf of the Government of Madras, F.J. Ferguson of Calicut undertook experimental planting of Para, Ceara and *Castilla* rubber at Plantation House, Calicut and at Poonoor near Thamarasseri in Calicut. In 1880, two *Hevea* plants were sent to the First Prince of Travancore and one of plants still exist in the compound of the Archeological Museum of Kerala, Trivandrum. In 1881, 28 Hevea plants were sent to the Andaman Islands. About 3000 seeds were sent in 1888 to the Commissioner of Central Provinces, Nagpur. A.G. Nicholson planted some *Hevea* and *Castilla* rubber trees in Howthorne estate, Salem during 1898 and in Glenburn estate, Kotagiri in 1902. Para rubber was planted in Ponda, Goa during 1900 (Kurian et al., 2000).

Beginning of commercial plantings

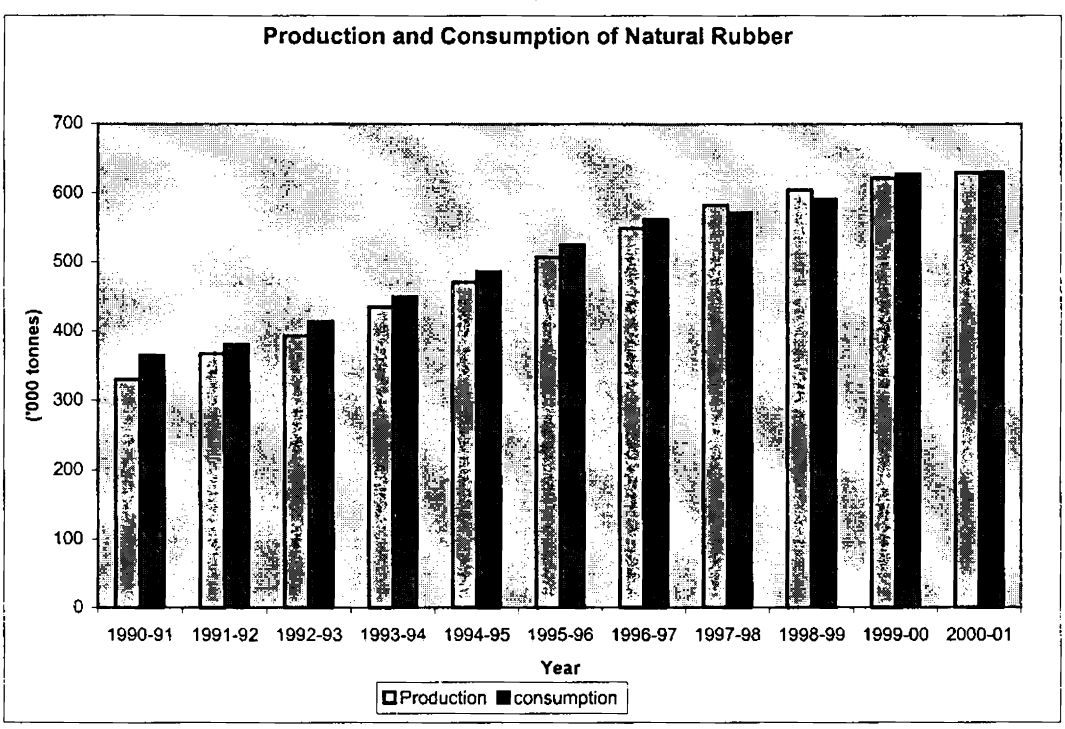
Kerala is considered the birthplace of rubber plantations in India. The British planters initiated rubber cultivation on a plantation scale and the state administration encouraged them by providing land, labour, capital and trade facilities. The liberal rules formulated in Travancore during 1860s and subsequently in Cochin for the distribution of forest and wasteland for plantation crops were instrumental for the initial growth and expansion. The Government forestlands were leased at very nominal tax rates. The price boom during the early 1900s attracted foreign investors to India in estate enterprises. Planting in the first rubber estate in Travancore was initiated in 1902 at Thattekad on the bank of Periyar river by a syndicate of which J.A.Hunter and

K.E.Nichol were active members (Anon, 1911). By 1904, planting of rubber was started in 'Yendayar', 'Eldorado', and 'Mundakayam' estates. By 1910, Mundakayam became the leading centre of rubber plantations in India (Speer, 1953). In1906, two important companies ie, the Central Travancore Rubber Company and the Mundakayam Valley Rubber Company came into existence. In the Cochin state, estates came up first at Palapilly in 1905, and then in Pudukad and Mooply. Almost at the same time, plantations were raised in south and central Malabar. Five companies-Kerala Rubber Company, Nilambur Rubber Estates, Pullangode Estate, Poonoor Estate and Kinalur Estate-set up plantations (George 2003). In 1910, the first local joint stock company to plant rubber was established in Travancore under the name "Malankara Rubber and Produce Company Ltd.". Vaniampara Rubber Company was started in Cochin during 1911. During the initial phase, the Indian rubber plantation industry was controlled by British companies and the rubber produced was exported mainly to London.

The Indian rubber plantation industry which was economically insignificant until about the dawn of Independence, has within the last five decades, surged beyond expectations by maintaining a vibrant growth rate-higher than majority of rubber goods producing countries in the world. Over the years, the Indian rubber industry has grown from strength to strength, particularly after Independence. The inception of Rubber Board in 1947 was an important landmark in the development of rubber cultivation. The Rubber Research Institute of India (RRII) was established in 1955 to undertake scientific research on aspects relating to production, cultivation and processing. The clone RRII 105 developed by Rubber Research Institute of India, ranked as one of the best in the world in terms of yield. In the last 45 years, the tappable area has gone up from 67,000 to 3,95,000 hectares, production from 24000 to 630405 tonnes and productivity from 320 to 1,575 kg per hectare, which is a record achievement of the Indian rubber plantation industry. The current average yield of 1,575-kg/ hectare is the highest in the

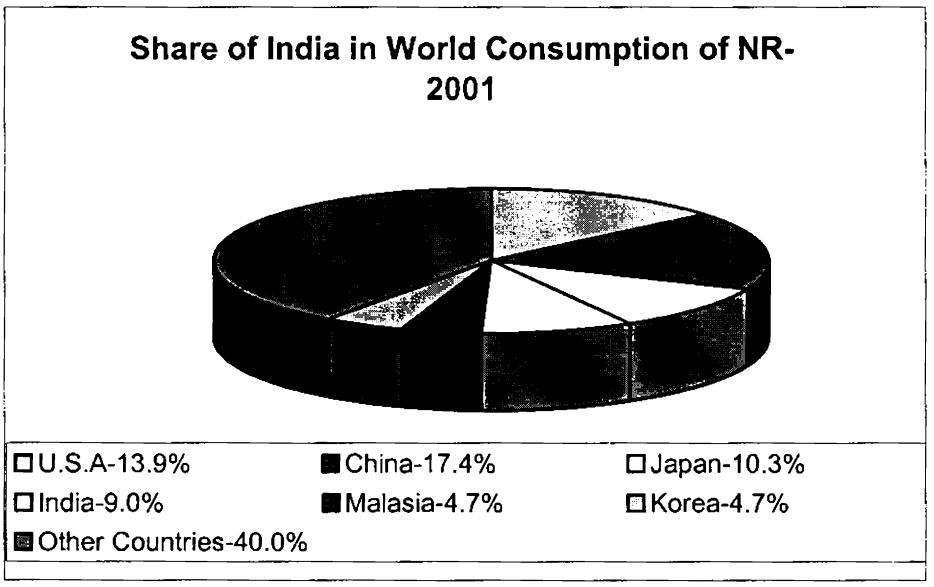
world. India is one of the few countries in the world which are entirely self sufficient in the supply of natural rubber for domestic manufacturing needs. One of the striking development in the industry since Independence was the preponderance of the smallholdings. The rubber manufacturing industry draws its strength, stability and sustenance from natural rubber. From 1955-56 to 1999-2000, the consumption of new rubber has increased by 27.5 fold from 29 KT to 795 KT. The per capita usage has grown from 0.1 kg to 0.8 kg. during this period. Currently rubber is successfully grown in Karnataka, Tripura, Assam, Meghalaya, Mizoram, Manipur, Nagaland, the Andaman and Nicobar Islands, Goa and Maharashtra. However, Kerala enjoys a near monopoly position by holding 75 per cent of the area occupied by the crop in the country. The production and consumption of natural rubber in India during 1990-91 to 2000-01 and the share of India in world consumption of natural rubber in 2001are shown in Chart IV.1 and Chart IV. 2 respectively.

Chart IV. 1



Source: *Indian Rubber Statistics*, Vol. 25, 2002, Rubber Board, Kottayam

Chart IV. 2



Source: *Indian Rubber Statistics*, Vol. 25, 2002, Rubber Board, Kottayam.

Marketable Forms of Rubber

The common marketable forms of Natural Rubber (NR) are Ribbed Smoked Sheet (RSS), crepe rubbers, Technically Specified Rubber (TSR), preserved latex and latex concentrates. Compared to other major NR producing countries, with the exception of Thailand, India's NR processing sector is characterised by the dominance of sheet rubber with a relative share of about 72 per cent (Jacob, George, and Chandy, Binni, 2002). The choice of a processing method by an individual grower depends on factors like investment capacity, expected production, availability of technical know-how, and potential demand, for the processed rubber. The classification of grades in India follows the international standards with minor changes. The international standards were originally set by the Rubber Manufacturers'Association (RMA) Inc., Washington, in 'International Standards of Quality and Packing for Natural Rubber Grades', also known as "The Green Book." The processed sheets are visually graded into six grades of Ribbed Smoked Sheets, viz. RSS IX, RSS 1, RSS 2, RSS 3, RSS 4 and RSS 5 according to the standards laid down in the Green Book. The sheets processed by smallholders are generally

of poor quality due to lack of cleanliness in latex collection, handling and coagulation, inadequacies in adding chemicals etc. Consequently, the smallholders generally sell their sheet rubber in ungraded lots consisting of a mixture of RSS 3, 4 and 5. The grading of crepes is also done visually as per the standards laid down in the Green Book.

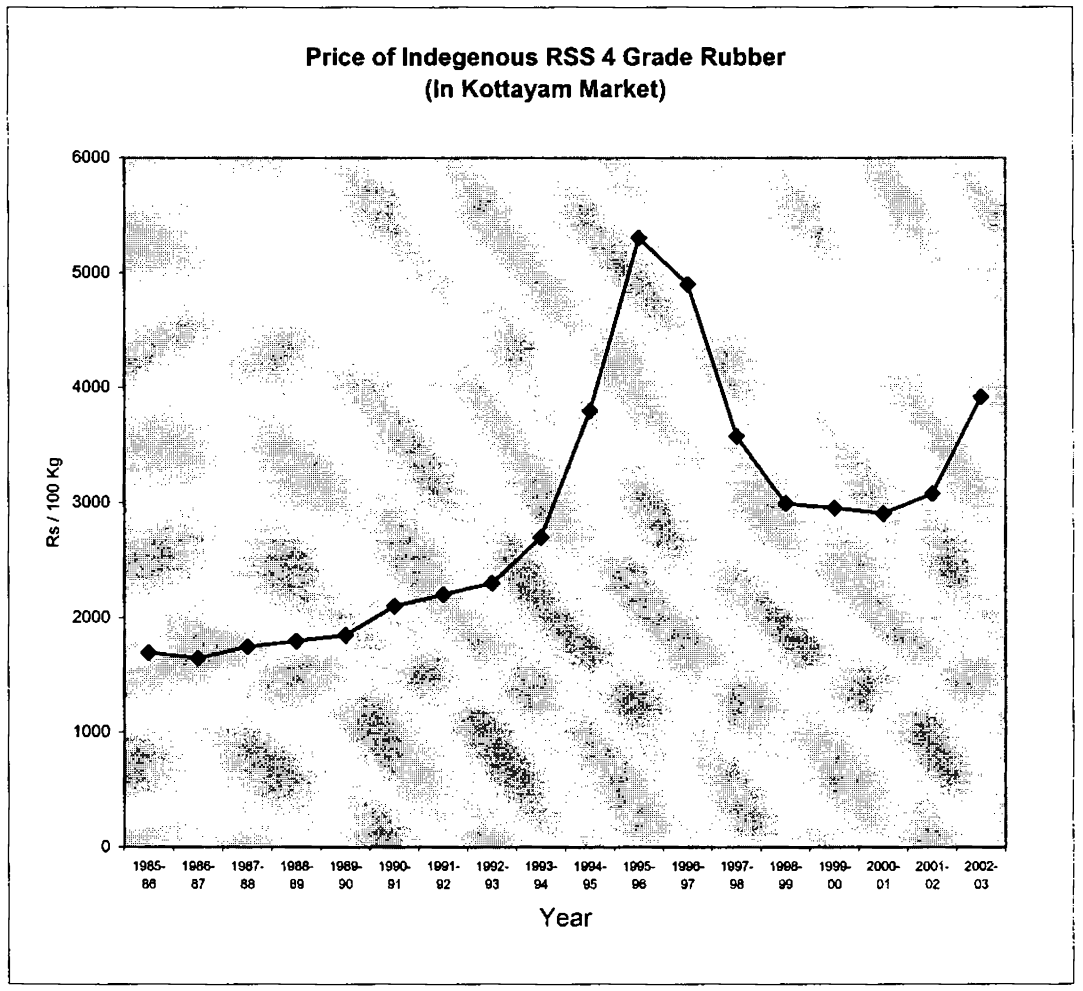
The enactment of The Rubber Act, 1947 and The Rubber Rules, 1955 there under was a landmark in the evolution of a fairly developed marketing system for rubber in India. According to rule 48 of The Rubber Rules, 1955, TSR in block or in any other form and preserved latex and latex concentrate shall be graded and marketed in conformity with the standards specified by the Bureau of Indian Standards (BIS) from time to time. The production of TSR was started in India during 1974-75. BIS specification prescribes six grades of block rubber, namely, ISNR 3CV, ISNR 3L, ISNR 5, ISNR 10, ISNR 20 and ISNR 50 depending upon the chemical and physical requirements. Latex concentrates are generally marketed in two forms: centrifuged latex and creamed latex and meets the requirements of BIS specifications. Preserved field latex is another form of marketable NR common in the primary market and is consumed mainly for the production of latex concentrates.

Price Component

Since the inception of the rubber plantation industry in India, the price was subject to extreme fluctuations in different historical contexts due to various socio-economic and political reasons. In 1910, growing demand resulted in a hike in prices but dropped in 1922 due to the accumulation of stock. It recovered slightly as a result of the international restrictions in 1925 but again fell drastically during the early 1930s (Sharma, 1947). The price stabilisation schemes promoted by the colonial powers were the Stevenson Scheme (1922-28) and International Rubber Regulation Agreement (1934-

44)(Veeraputhran and George, Tharian, 2003). In May 1942, the Government fixed statutory maximum prices for the first time in India and later in September converted the maximum prices of rubber to fixed prices. This marked the beginning of Government price regulation for rubber. The Rubber Control and Production Order, 1942 also had provision for statutory price control and a Government purchasing organisation was simultaneously set up. The price control was continued till 30 September 1946 when the Rubber Control and Production Order lapsed. The Indian Rubber (Production and Marketing) Act 1947 empowered the government to fix the maximum and minimum prices. In conformity with the reform process in the Indian economy, in February 1994 Government of India introduced the scheme of updation and notification of benchmark price on the basis of changes in the cost of production. The benchmark prices per 100 kg. notified in February 1994 were Rs. 2490 for RSS 4 (ribbed smoked sheet) and Rs. 2440 for RSS 5 and revised on September 1998 to Rs.3405 for RSS 4 and Rs. 3355 for RSS 5. The average price of RSS 4 in the domestic market at Kottayam was Rs. 33.89 per Kg. In April 2002 which increased to Rs. 53.46 in November. The international price RSS 3, equivalent of RSS 4 of India, increased from Rs. 34.22 to Rs. 59.54 in the corresponding period. (Government of Kerala, 2003). The liberalised policies of the Government in respect of international trading of rubber and rubber products gave the country a relatively free access to the world market. Consequently the ups and downs in the world market began to be reflected in India also. The price movements of indigenous RSS 4 Grade Rubber in Kottayam market during 1985-86 to 2001-02 is given in Chart IV.3.

Chart IV. 3



Source: *Indian Rubber Statistics* Vol. *26, 2003,* Rubber Board, Kottayam, Kerala.

Synthetic Rubber

Synthetic rubber production was also permitted, to meet the gap between demand and supply. M/s. Synthetics &Chemicals was the first synthetic rubber unit in India, established in 1962 in Bareilly to produce 30,000 tonnes of Styrene Butadiene Rubber (SBR). Later, the plant capacity was raised to 75,000 tonnes, but the unit is defunct from July 1999 as cheap imports of SBR following trade liberalisation under the regulations of the WTO seriously affected its business. A second synthetic rubber factory was set up by the Indian Petrochemicals Ltd., at Vadodara in the public sector in 1978 to produce 20,000 tonnes of Poly Butadiene Rubber (PBR). The capacity was enhanced to 50,000 tonnes later. A few factories also exist to produce

special purpose synthetic rubbers with limited capacities: Apar Limited to produce nitrile rubber, Unimers Ltd. to produce Ethylene Propylene Diene Methylene (EPDM), and Apcotex Latex to produce Vinyl Pyridine (VP) latex. Total production of synthetic rubber in India rose to 69,653 MT. during 2001-02 and consumption to around 174,540 MT. The country uses natural rubber to synthetic rubber in 80:20 proportions while the global pattern in 40:60. The total consumption of natural and synthetic rubber by the top five countries in the year 2000 is shown in Table IV.3

Table IV. 3: Rubber Consumption by the Top Five (Unit: Metric tonnes)

Rank	Country	Rubber Consumption
1	USA	3354,000
2	China	2535,000
3	Japan	1889,000
4	India	864,000
5	Korea	713,000

Source: Philip K.M. (2002): *The Evolution of the Indian Rubber Industry*, All India India Rubber Industries Association, Mumbai, p.14.

Reclaimed Rubber

Besides natural rubber and synthetic rubber, India is also producing, as well as consuming Reclaimed Rubber (RR). In fact, India has become the largest producer and consumer of RR in the world. Reclaimed rubber is prepared from discarded rubber products and rubber scrap. Reclaiming industry is of considerable economic importance as it renders useful service of recycling of material, which would otherwise be waste. The reclaimed rubber is used in the manufacture of rubber goods usually blended with natural and synthetic rubber. Currently there are 38 units engaged in the manufacture of RR. During 2001-02, the country produced and consumed about 64000 tonnes of RR. The proportion of the use of NR, SR and RR by the Indian rubber goods manufacturing industry during the year was 73:19:8 (Lalithakumari and Jacob, Tom, 2000). India has been quite successful in the manufacture of reclaim rubber. We produce the best grades of reclaim rubbers

from natural, synthetic, and butyl rubbers and are in a position to export substantial quantities. Table IV.4 shows the production, import, export and consumption of natural and synthetic rubber in India during the last decade.

Table IV. 4 Production, Import, Export and Consumption of Natural and Synthetic Rubber (Tonnes)

Year	Production			Import			Export	Consumption		
	Natural	Synthetic	Total	Natural	Synthetic	Total	Natural	Synthetic	Total	
1990-91	329615	57293	386908	49013	51715	100728	-	364310	104735	469045
1991-92	366745	57726	424471	15070	39210	54280	5834	380150	105650	485800
1992-93	393490	57892	451382	17884	47362	65246	5999	414105	108690	522795
1993-94	435160	49633	484793	19940	64338	84278	186	450480	113395	563875
1994-95	471815	63681	535496	8093	73860	81953	1961	485850	122710	608560
1995-96	506910	68223	575133	51635	71135	123370	1130	525465	134085	659550
1996-97	549425	64563	613988	19770	91050	110820	1598	561765	142810	704575
1997-98	583830	71993	655823	32070	86389	118459	1415	571820	160915	732735
1998-99	605045	67590	672635	29534	97548	127082	1840	591545	156395	747940
1999-00	622265	60293	682558	20213	104842	125055	5989	628110	167220	795330
2000-01	630405	65460	695865	8970	106923	115893	13356	631475	170670	802145

Source: *Indian Rubber Statistics, Vol. 25, 2002,* Rubber Board, Kottayam, p.34

Natural Rubber Production in Kerala

A cardinal feature of Kerala's agriculture is the predominance of plantation crops like rubber in the cropping pattern. The entire production of this crop is marketable surplus. In the post –independence period, rubber cultivation had taken a special place in the economy of Kerala, particularly after 1970-71. Kerala's agriculture sector has undergone significant structural transformation since the early 1970s in favour of relatively less intensive perennial crops often at the expense of annual crops. The gradual transformation in the cropping pattern of the State's agriculture culminating in the dominance of perennial crops, especially plantation crops, is evident from the fact that by 1998-99 this segment accounted for more than 63 per cent of the total cropped area (Leksmi and George, Tharian, 2003). An important feature of the natural

rubber economy is the dominance of smallholdings sector with a share of 91 per cent in the area under cultivation. NR also plays a vital role in the agrarian economy of the State as the share of the crop in the total cropped area is 15.67 per cent, contributing 15.16 per cent of the state agricultural gross domestic product, providing direct employment to more than 3.4 lakh persons (Rubber Board, 2000). During 1970-71 the area under rubber cultivation in the State was 198424 hectares. During 2001-02, the total area under rubber cultivation increased to 475039 hectares. In the last three decades the area under this crop in the State has increased by 239.06 per cent. During 1970-71 the production of natural rubber in Kerala was 86773 tonnes and it has increased to 580350 tonnes during 2001-02. In the last three decades production of natural rubber has increased to 668.25 per cent. Increase in natural rubber production in Kerala is due to both the extension of area under rubber cultivation and improvement in yield per hectare. The following tables IV.5 and IV.6 show the area and production of natural rubber in Kerala since 1970-71.

Table IV. 5: Area under Rubber Cultivation in Kerala

Year	Area in Hectares	Index
1970-71	198424	100
1975-76	211808	106.74
1980-81	253784	127.89
1985-86	341506	172.10
1990-91	407821	205.53
1995-96	449000	226.28
1997-98	465282	234.48
1998-99	469924	236.82
1999-00	472900	238.32
2000-01	474365	239.06
2001-02	475039	239.40

Source: Complied from *Indian Rubber Statistics*, Vol.26, 2003, Rubber Board, Kottayam

Table IV. 6: Production of Natural Rubber in Kerala

Year	Production in Tonnes	Index
1970-71	86773	100
1975-76	128769	148.39
1980-81	140320	161.70
1985-86	184563	212.69
1990-91	307521	354.39
1995-96	474555	546.89
1996-97	512756	590.91
1997-98	541935	624.54
1998-99	559099	644.32
1999-00	572820	660.13
2000-01	579866	668.25
2001-02	580350	668.81

Source: Complied from *Indian Rubber Statistics*, Vol.26, 2003, Rubber Board, Kottayam

Yield per Hectare in Kerala

During the last thirty years yield per hectare of rubber cultivation in Kerala has increased to 2.5 times. Use of high yielding varieties of plants, system of scientific manuring, and use of pesticides, effective plant protection measures, improvement in the system of tapping, use of rain guarding etc. are main factors that contributed to the improvement in the yield per hectare. The active role of the propagating rubber cultivation, the subsidy schemes and above all the price protection also promoted large-scale switchover to natural rubber cultivation. Yield per hectare was only 647 kg. in 1970-71 which increased to 1079 kg. in 1990-91 and again reached to 1612 kg. in 2000-01. The table IV.7 gives average yield per hectare of rubber cultivation in Kerala.

Table IV.7 Average Yield per Hectare of Rubber Cultivation in Kerala

Year	Yield Per Hectare in kg.	Index
1970-71	647	100
1975-76	768	110.70
1980-81	780	120.55
1985-86	897	138.63
1990-91	1079	166.76
1995-96	1443	223.02
1996-97	1529	236.32
1997-98	1583	244.66
1998-99	1599	247.14
1999-00	1612	249.14
2000-01	1612	249.14

Source: Complied from *Indian Rubber Statistics* for respective years, Vol.25, 2002, Rubber Board, Kottayam

Area and Production of Natural Rubber in Kottayam and Ernakulam District

Though rubber is cultivated in all districts of Kerala, it is mainly concentrated in Kottayam, Ernakulam and Pathanamthitta districts. Kottayam district accounts for 23.43 per cent of total area and 24.22 per cent of total production of natural rubber in Kerala. Ernakulam district accounts for 11.94 percent of the total area and 12.61 percent of the total production of natural rubber in Kerala. Table IV.8 presents District wise distribution of area and production of natural rubber in Kerala.

Table IV. 8

District wise Area and Production of Natural Rubber in Kerala during 2001-02

Name of the District	Area in Hectares		Production in Tonnes	
Thiruvananthapuram	28296	(5.96)	33586	(5.79)
Kollam	36863	(7.76)	46854	(8.07)
Pathanamthitta	47862	(10.08)	62502	(10.77)
Alappuzha	3849	(0.81)	4114	(0.71)
Kottayam	**111301**	**(23.43)**	**140543**	**(24.22)**
Idukki	38123	(8.02)	45260	(7.80)
Ernakulam	**56710**	**(11.94)**	**73219**	**(12.61)**
Thrissur	13402	(2.82)	19762	(3.41)
Palakkad	28985	(6.10)	31759	(5.47)
Malappuram	29263	(6.16)	32904	(5.67)
Kozhikode	17575	(3.70)	22884	(3.94)
Wayanad	6450	(1.36)	4038	(0.70
Kannur	34012	(7.16)	38800	(6.69)
Kasargode	22348	(4.70)	24125	(4.15)
Kerala	**475039**	**(100.00)**	**580350**	**(100.00)**

Note: Figures in brackets indicate percentage share in each districts

Source: Complied from Indian Rubber Statistics for respective pages, Vol.26, 2003, Rubber Board, Kottayam

The total area under rubber cultivation in Kottayam district in 1970-71 was 59187 hectares. In 2001-02, the area under rubber cultivation in Kottayam district has increased to 111301 hectares. The total production of natural rubber in Kottayam district in1970-71 was 26907 tonnes. In 2001-02, the production of natural rubber has increased to 140543 tonnes. In other words there was more than five fold increase in output of rubber production in Kottayam district. Table IV.9 presents information regarding area and production of natural rubber in Kottayam district from 1970-71 to 2001-02. Charts IV.4 and IV.5 highlight the growth of the area and production of natural rubber in Kottayam district from 1970-71 to 2001-02 respectively.

Table IV. 9: Area and Production of Natural Rubber in Kottayam District

Year	Area in Hectares	Production in Tonnes
1970-71	59187	26907
1975-76	56130	34021
1980-81	66926	36132
1985-86	84509	50134
1990-91	103888	82852
1995-96	109582	120946
1997-98	110277	135125
1998-99	110548	137820
1999-00	110923	139550
2000-01	111196	141266
2001-02	111301	140543

Source: Complied from *Indian Rubber Statistics* for relevant pages, Vol.26, 2003, Rubber Board, Kottayam

Chart IV. 4

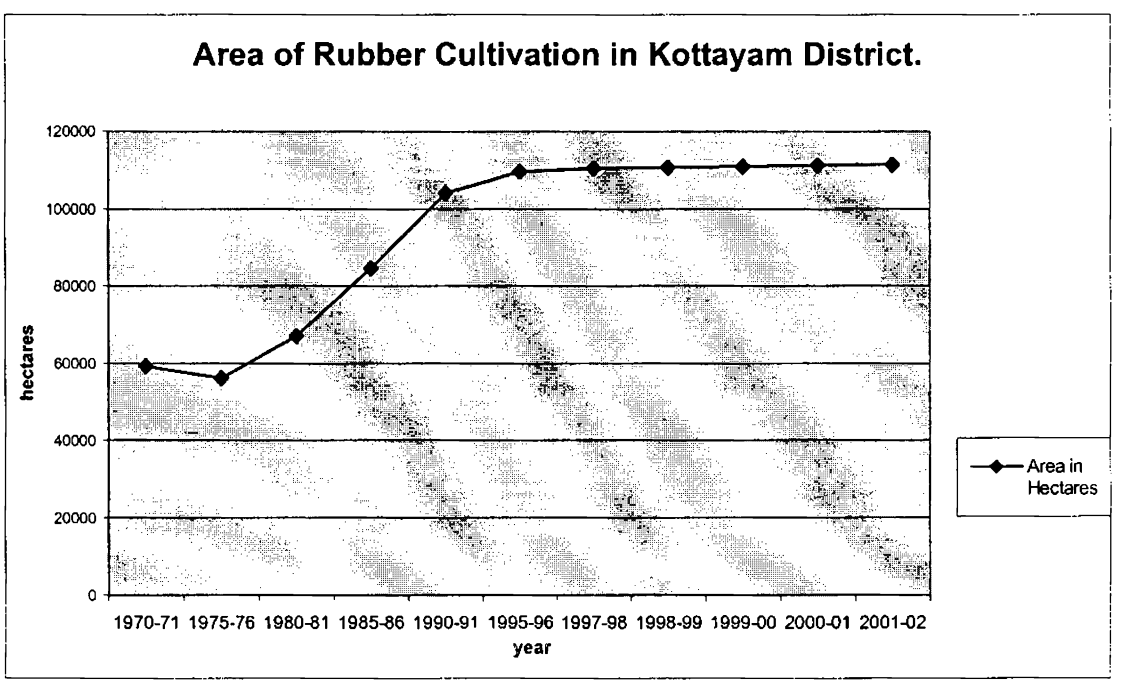
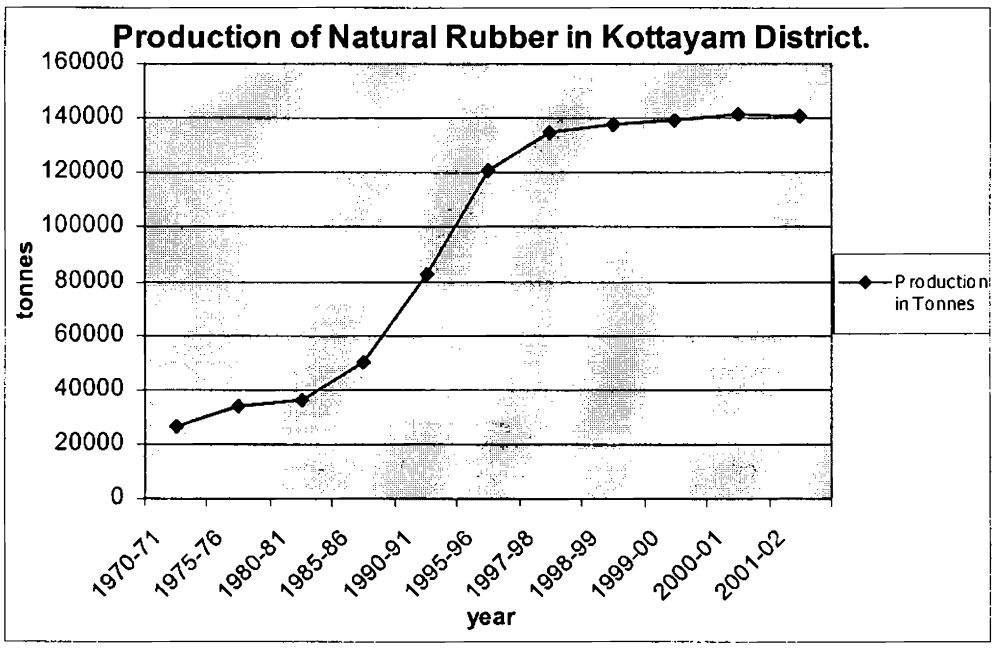


Chart IV. 5



Total area under rubber cultivation in Ernakulam district in 1970-71 was 28067 hectares. In 2001-02, the total area of rubber cultivation has increased to 56710 hectares. Total production of natural rubber in Ernakulam district in 1970-71 was 11907 tonnes. It has increased to 73219 tonnes in 2001-02. In other wards there was more than six fold increase in output of rubber production in Ernakulam district from 1970-71 to 2001-02. Table IV.10 shows the area and production of natural rubber in Ernakulam district from 1970-71 to 2001-02. Charts IV.6 and IV.7 highlight the growth of area and production of rubber in Ernakulam district from 1970-71 to 2001-02 respectively.

Table IV. 10: Area and production of Natural Rubber in Ernakulam District

Year	Area in Hectares	Production in Tonnes
1970-71	28067	11907
1975-76	21069	12292
1980-81	26855	13929
1985-86	38779	19419
1990-91	51163	37586
1995-96	55247	62159
1997-98	56025	69967
1998-99	56243	71593
1999-00	56383	72663
2000-01	56644	73557
2001-02	56710	73219

Source: Complied from *Indian Rubber Statistics* for relevant pages, Vol.26, 2003,Rubber Board, Kottayam

Chart IV. 6

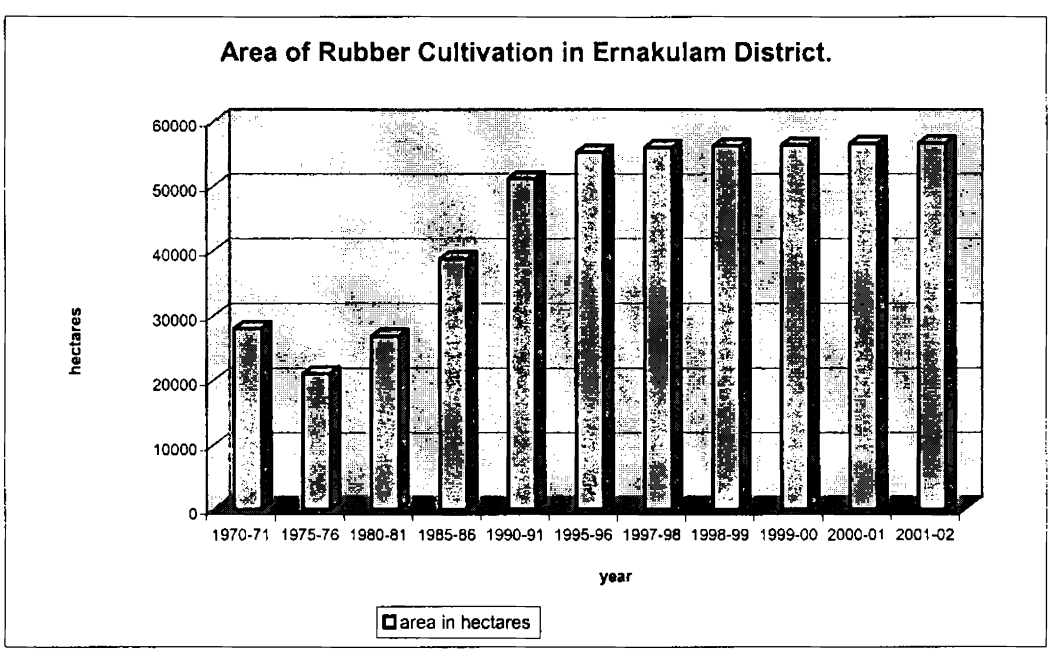
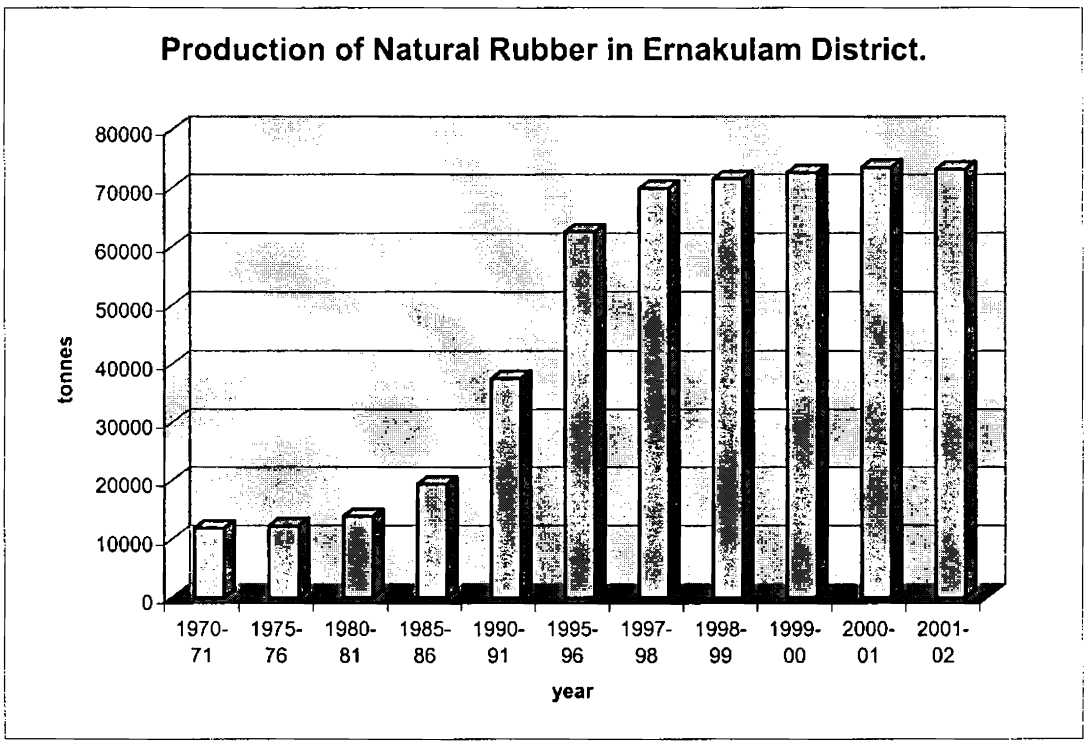


Chart IV. 7



Indian Rubber Manufacturing Industry

The rubber manufacturing industry in India made a start in 1922 with the establishment of the Dixie Aye Rubber Factory Ltd, a general rubber goods factory in the erstwhile Bengal province, which went into liquidation in 1923 (Sundram 1987). In 1923 a water proofing factory, the Bengal Waterproof Works, and another for the manufacture of rubber-covered cables were started in Kolkata. But the real beginning was made with the promulgation of the International Rubber Agreement (1934), which by fixing quotas raised the world price of rubber. As a result, large portion of indigenous rubber, till then exported, became available for internal consumption at a price lower than world price. This, coupled with cheap labour in India, induced some of the large overseas manufacturing of rubber goods to establish subsidiary units in the

country. Important among them were: (1) Bata Shoe Co., Calcutta (1933) for rubber footwear; (2) Indian Rubber Manufacturers Ltd, Calcutta (1934) for manufacture of railway and mechanical rubber goods; (3) Trivandrum Rubber Works (1935); (4) Dunlop Rubber Co., Ltd. (1935) and (5) Firestone Tyre Rubber Co.Ltd, Bombay (1940).

The rubber products manufacturing sector can be broadly divided into three categories. The well- organised auto tyre sector with 32 factories, accounting for about 46 percent of rubber consumption followed by the medium scale units, about 300 in number, accounting for another 30 percent of the polymer consumption. However, the backbone of the Indian rubber industry is its small and tiny sector with 4700 manufacturing units spread all over the country accounting for the balance 24 percent consumption. It can be basically classified into the tyre sector and non-tyre sector. The non-tyre sector, predominated by small–scale units produces a wide variety of industrial and consumer products. From 1955-56 to 1999-2000 the number of rubber goods factories has shot up from about 500 to over 6000 (Patel, 2001). What is more remarkable is the annual compound growth rate of 8 per cent, which it has achieved over the last four and a half decades. The manufacturing units are unevenly concentrated in India. Their number is more in Kerala, Maharashtra, West Bengal, Punjab Delhi, Tamil Nadu, Gujarat, Uttar Pradesh and Haryana. These states account for about 86 per cent of the total rubber manufacturing units (Rubber Board, 2000). The number of licensed manufacturers in different states at the end of each year is given in Table IV.11.

Table IV. 11
Number of Licensed Manufacturers in Different States at the End of Each Year

State/Union Territory	1985-86	1990-91	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Kerala	599	816	947	994	1021	1026	974	891
Maharashtra	468	569	613	627	629	617	623	612
Punjab	371	538	623	608	611	593	552	554
Tamil Nadu	326	491	537	533	545	523	506	502
West Bengal	413	494	512	531	508	506	484	447
Uttar Pradesh	352	504	486	465	475	464	450	438
Gujarat	262	304	414	427	432	422	395	378
Delhi	326	377	358	333	309	306	297	276
Haryana	213	252	305	298	313	315	311	289
Karnataka	162	221	253	252	258	249	249	229
Andhra Pradesh	107	158	174	173	161	157	140	139
Madhya Pradesh	46	85	96	92	91	91	91	88
Rajasthan	44	66	105	105	98	93	92	87
Bihar	30	47	37	38	34	33	33	34
Goa	12	24	19	20	31	24	28	25
Orissa	17	19	17	17	16	16	16	14
Himachal Pradesh	9	12	13	12	8	7	8	6
Assam	3	3	4	4	6	6	5	6
Others	9	48	59	59	49	46	49	47
Total	3769	5028	5572	5588	5595	5494	5303	5062

Source: *Indian Rubber Statistics* Vol.25, 2002, Rubber Board, Kottayam, p.53.

India is a major producer and a major consumer as well. It is the fourth largest producer of natural rubber in the world after Thailand, Indonesia and Malaysia. It is also the fourth consumer of natural rubber after the USA, China and Japan. Consumption of all kinds of rubber according to end products is given in Table IV.12

Table IV. 12

Consumption of all Kinds of Rubber According to End Products (tonnes)

Products	2000-01			
	NR	SR	RR	Total
1.Auto tyres & tubes	285275	94066	10210	389551
2.Cycle tyres & tubes	82592	15245	18283	116120
3.Camel back	38104	8815	3924	50843
4.Footwears	70547	31555	7832	109934
5.Belts and hoses	38220	7934	3922	50076
6.Latex foam	31620	-	-	31620
7.Cables and wires	1719	1684	824	4227
8.Battery boxes	1865	2691	9675	14231
9.Dipped goods	32081	-	-	32081
10.Others	49452	8680	7590	65722
Total	631475	170670	62260	864405

NR-Natural Rubber, SR-Synthetic Rubber & RR-Reclaimed Rubber.
Source: *Indian Rubber Statistics*, Vol 25, 2002, Rubber Board, Kottayam, P.60.

Self-reliance.

The Indian government was keen on following the policy of self-reliance in as large an area as possible. When development plans for the rubber industry were prepared under the aegis of the Five Year Plans, the industry was divided into major groups such as auto types, footwear, hoses, belting, dipped rubber goods, mechanical rubber goods etc for identifying growth measures. Along with this development plan perspectives also covered various types of raw materials required by the rubber industry such as raw rubbers- natural, synthetic and reclaim, carbon black and sink oxide, tyre cords, rubber chemicals etc. It was this well conceived exercise that gave an impetus to the rubber industry to grow. India is perhaps the only country, which is self-sufficient in respect of most of the raw materials. However, it is importing some of them; it is either due to the marginal gap between demand and supply from local resources or against export of finished goods under

advance licence. A significant base for the growth and development of the rubber industry in India is the availability of natural rubber plantations have been in existence in India since the beginning of the 20th century. They have acted as springboard from which the industry has shaped its growth and development. The rubber plantation industry grew very fast as a result of the vertical integration with the growing manufacturing industry.

Exports.

While meeting the entire domestic demand for a wide and diverse range of rubber products, the industry has built up a steady export market for its products under highly competitive conditions even in developed countries. India has come a long way in the production of tyres. Between 1936 and 1960, multinational tyre manufacturers had complete grip over the Indian market. The Indian manufacturers entered the tyre sector only in 1961 and now they play a dominant role in this market. Automotive tyre and tube is a pivotal component of the Indian rubber industry. The industry produces 150 sizes of tyre with 500 different ply ratings. These fit on every vehicle on the street and in the sophisticated aircraft as well. It may be noted that the number of four-wheelers on the road is on the increase. In the case of cars, new models are entering the market to entice the consumer. Publicity budgets are soaring in the case of Fiat Palio, Santro, Accent, Sonata, Toyota, Matiz, Ford Ikon, Mitsubishi Lancer, Bolero, Indica V2, Qualis- to name only, a few which have entered the fray. The demand for buses is galloping ahead because the railways are not able to handle the increased offerings. As shown in Table IV.13 the industry had recorded Compound Annual Growth Rate (CAGR) of 10 per cent a year in the decade ending in 1998-99.

Table IV. 13 : Total Tyre Production in India from 1989-90 to 1999-2000(April-March)

Period	Production (Lakhs)	Per cent change over previous year	CAGR during last decade
1989-90	174.41	20	
1990-91	180.52	4	
1991-92	178.88	-1	
1992-93	199.52	12	
1993-94	242.68	22	
1994-95	284.85	17	10%
1995-96	304-18	7	
1996-97	324.97	7	
1997-98	337.69	4	
1998-99	369.31	9	
1999-00	357.17		

Source: Facts for You: Market Survey, July 2002, p.7

India's exports of rubber products, including tyres, exceed Rs 21530 million per annum. The range of products exported include, automotive tyres and tubes, rubber and canvas foot wears, cycle tyres, tubes, pharmaceutical goods including gloves, rubber hoses, cots and aprons, belts and beltings, hot water bottles, ice bags, rubber rings etc. These products are exported to over 85 countries major destinations being the USA, Russia, the U.K., Afghanistan, Italy, Germany, Canada and African countries. India, China and Brazil are the three countries in the world that have domestic production facilities for natural as well as synthetic rubbers and the entire quantity so produced is consumed within the country itself. It is to the credit of Indian entrepreneurs that there is some who have succeeded despite the odds in producing rubber goods of international quality for quality conscious export markets (Philip, 2002). Both the automobile tyre and miscellaneous rubber goods industry have succeeded in penetrating several highly sophisticated international markets and exporting high quality rubber products at

international prices. Table IV.14 below shows the value of rubber goods exported from India over the last five years.

Table IV. 14: Export of Rubber Products

(Unit: Rs I crore/10 million)

Product	1996-97	1997-98	1998-99	1999-00	2000-01
Automobile Tyres &Tubes	794.42	904.39	824.00	864.00	953.00
Belting	57.88	53.98	53.00	50.20	90.00
Cycle Tyres &Tubes	71.18	74.08	88.00	122.80	210.00
Hoses	8.85	9.07	11.00	14.50	26.00
Hygienic &Medical Articles	147.72	133.88	145.00	136.60	184.00
Rubber/Rubber- soled Footwear	26.65	45.57	45.00	N.A.	N.A.
Rubber Coats & Aprons for Textile industry	5.98	8.34	9.30	10.30	17.00
Rubber Sheeting	17.29	22.76	25.00	57.70	67.50
Others	95.17	92.93	118.70	180.60	175.50
Total	1225.14	1341.00	1319.00	1446.70	1724.00

Source: K.M.Philip (2002): *The Evolution of the Indian Rubber Industry*, All India Rubber Industries Association, Mumbai. p. 21

Technology

Technology is the engine for growth in the rubber industry, which employs nearly four lakh people of whom about 15000 are technical personnel. India is more or less self sufficient in rubber industry. Most of the equipment and barring only a very few sophisticated machine tools, are made indigenously. We build mixing mills, extruders, calendaring machines, rubber moulds, rubber presses, etc. The industry is proud of excellent research and development facilities continuously changing out new products and ideas. This has produced many new age polymers like thermo plastics.

We follow a stringent quality control right from the selection of raw materials and through various stages of processing and manufacturing. Many of our manufacturing units have an ISO 9000 accreditation. Perhaps the greatest proof of the quality of our rubber products is the great demand for

them all over the world. The USA alone accounts for around 20 per cent exports of Indian rubber products (Vohra, 2001).

Future trends

The industry's product range is a legion with something like 35000 diversified rubber items manufactured to exacting specifications to withstand critical working conditions. The Indian rubber manufacturing industry has successfully adapted to many varying local needs, and to the smaller-scale of production warranted by local conditions. The factors that would influence future trends in consumption are many as in the past. First and foremost is the potential that exists today for improving per capita consumption of rubber in India, which is as low as 0.86 kg. as against 1.69 kg. in China, 2.94 kg. in Brazil, 12.74 in Canada, 14.27 kg.in Japan, 9.88 kg. in USA and 4.66 kg. in UK (Rubber Board 2001). Even to reach a modest target of 2 kg. per capita consumption by year 2010, the country's manufacturing industry will have to grow by 150 per cent over the next nine years. Developments in road building activities will have a profound influence on consumption of rubber and growth in vehicle production will generate a demand for tyres and other automotive components. It may not be exaggerating to say that the rubber industry will be among the top industries of the 21st century in India. Overseas producers particularly auto tyre makers, footwear industry, automotive rubber products etc. have started establishing joint ventures in a big way in this hub of rubber goods activities and many more will follow the suit in the near future. To increase India's present share of just about 1 per cent of the global market, Indian rubber products should become known and better-accepted in the world market. For this, it is imperative to develop an Indian strategy for the rubber industry, which should provide for large-scale investments in R&D for producing assured high quality products through innovative technologies at competitive prices.

World Trade Organisation and Rubber Industry

It is well recognized now that the World Trade Organisation (WTO) is impacting every business in all its aspects, including the rubber industry. The rubber industry consists of different sectors, namely 1) natural rubber, 2) synthetic rubber 3) reclaim rubber, 4) rubber products manufacturing sector, 5) rubber chemicals, and 6) the rubber machinery manufacturing sector. Among these, the impact of the WTO regime will be felt most on the Natural Rubber (NR) producing sector. Natural rubber is classified as industrial raw material in WTO codes unlike other important plantation crops like tea, coffee, cardamom and pepper which have been categorized as agricultural commodities. The implications of classifying NR as an industrial raw material or an agricultural product relate to the extent of protection and subsidy that could be applied. Generally, in the case of an agricultural product a higher import duty could be levied because the bound rates for agricultural products are higher than non-agricultural products. Since the objective of the WTO is market orientation, competition and "free and fair" trade among its members, it is increasingly being realised that the NR industries of different countries will survive only if they become globally efficient and competitive. In some of these countries like China and Brazil, NR is produced under adverse conditions. The obvious implication is that they will most likely find it difficult to make their NR industries globally efficient and competitive. Malaysia, the one-time leading NR producing country, which made much progress in industrialisation too, finding it difficult to be competitive thanks to acute scarcity of labour, high wage levels and rising opportunity costs.

Implications for synthetic rubber

The Synthetic Rubber (SR) producing sector is dominated by the developed countries such as the USA, Japan and the European nations. In

most of these countries the SR producing sector has had serious problems due to lack of demand. Since the WTO objective is to establish a fair, equitable and transparent multilateral trading system, through progressive liberalisation and rejection of protectionism, it is likely that the demand for SR will increase in the developing nations including some of the NR producing countries. However, this increased SR usage may become restricted to special- purpose synthetic rubbers. The other impact of WTO on this sector would be that small capacity SR factories in some of the developing countries could find it increasingly difficult to survive because of high cost of production.

The Reclaimed Rubber (RR) producing industry, mostly concentrated in some of the developing countries, may find it easy to compete, because of the possible increased availability of discarded rubber products from developed countries, which are difficult to dispose of. There is also a possibility of increased usage of RR in some countries as a consequence of the elimination of tariff barriers.

Impact of Regulations

Enhanced market access among the WTO member-countries was one of the important steps agreed upon under the Uruguay Round of trade negotiations to foster economic integration through progressive reduction of import tariff rates and removal of non-tariff barriers. India continued to remove from year to year the non-tariff barriers. Barriers on 715 commodities were lifted from 1 April 2001, which resulted in dispensing with the quantitative restrictions on a total of 9,363 items. The list of NR-related items now liberated from Quantitative Restrictions (QRs) are given in Table IV.15

Table IV. 15: Processed Forms of NR on which QRs were lifted on 31-3-2001

Sl. No. in the list of 715 tariff lines	HS Code	Description of the tariff line
175	40011001	NR latex, not pre-vulcanised
176	40011002	NR latex, pre-vulcanised
177	40012100	NR, smoked sheets
178	40012201	Oil extended NR
179	40012202	Chemically modified forms of NR
180	40012209	Other technically specified NR
181	40012901	Other hevea rubber
182	40012902	Crepe rubber from latex, pale latex crepe
183	40012903	Estate brown crepe
184	40012909	Other NR, non-latex
185	40013000	Balata, gutta-percha, guayule etc.

Source: Asian Rubber Handbook Directory 2003, Dhanam Publications (Pvt) Ltd, Cochin, p.85.

Potential winners

The rubber products manufacturing industry, as a result of the development of the multilateral trading system may get a boost in the developed countries, but industries in some of the developing countries may suffer since they will take time to make their industries globally competitive. There is a possibility of some of the small -scale units closing down in the developing countries as they lack economies of scale and scope and state-of the art technical know-how. The rubber chemicals and machinery manufacturing sectors of the world are more dominant in the developed countries such as USA, Japan and the European nations than elsewhere. Under the WTO regime, these sectors may become stronger particularly owing to reduction in customs tariffs in developing countries, which can lead to a high flow of exports from the former to the latter (George, 2002).

All these possibilities suggest that the impact of the WTO on the rubber industry will vary from country to country and from one sector of the industry to another and also within sectors. Where the rubber industry faces serious threats from the WTO regulations, the countries concerned have no option but to accept the challenges and work towards converting the threats to opportunities with the help of the Government machinery. The opportunity is open for those countries with high productivity at lower cost and more land space available for growing rubber (Budiman, 2003).

RUBBER-BASED INDUSTRY IN KERALA-THE PRESENT STATUS

In Kerala, the first rubber-based industry, the Trivandrum Rubber Works, was started in 1935. The War efforts encouraged the infant rubber goods manufacturing industry to produce more rubber goods. This changed the position of the country from an exporter of natural rubber to an importer. A few small manufacturing units around Kottayam also came into existence in 1940s. Out of the tyre manufacturing units located in Kerala, the Appolo Tyres Ltd, Chalakudi and the Premier Tyre Ltd, Kalamassery are the two big units using above 1000 tonnes per year. The MRF Ltd, Kottayam (Vadavathoor) unit is another big manufacturing unit. A fourth auto-tyre unit namely the KTC Tyre Ltd, Calicut started production in 1985.The two main medium scale units are the Ruby Rubber Ltd and the Trivandrum Rubber Works.

Kerala was till recently considered the land of coconut trees. But the rapidity with which the state is covered by rubber plantations inclines one to think that Kerala is the land of rubber trees. Kerala accounts for 92 percent of natural rubber production in the country while less than 15 per cent of their production is commercially consumed in the State (Government of Kerala, 2002). Rubber produced here is processed as raw sheet, crepe or technically specified rubber or as preserved latex concentrate. These are sent to rubber factories in different states of India. Since a vast majority of the rubber

produced is thus sent to other States it is often suggested in various seminars and discussions that Kerala should convert a lion's share of the rubber produced as finished products and sent to other States as value added items. But the consumption of rubber in industry is not growing in Kerala to any appreciable extent although various incentives are offered to rubber- based industries by the State Government. There are over 5000 rubber goods manufacturing industries in the country. But the number of units consuming one thousand tonnes or more of natural rubber per year is only forty- five. More than 4700 of these units are very small consuming less than 50 tonnes of rubber per year. Mere increase in the number of rubber -based industries is not sufficient to ensure a sizeable increase in rubber consumption. When large factories with 1000 tonnes or more annual rubber consumption are established, there can be noticeable consumption increase. Thus in terms of number, Kerala has the highest number of rubber- based industries among Indian states, but the State account for only 15 per cent of rubber consumption in India. The Rubber Park India (P) Ltd set up recently at Irapuram near Kochi is meant to set up new user industries. The Rubber Park India (P) Ltd visualises as a model industrial estate that provides technology models for potential entrepreneurs to launch similar ventures. The product wise classification and the trends in growth of rubber-based manufacturing units in Kerala are shown in Table IV.16 and Table IV.17 respectively.

Table IV. 16

Productwise Classification of Rubber-Based Manufacturing Units in Kerala (1998-1999)

Sl. No.	Product group	Number of units based on licensed quantity (M.T.)					
		Below 50	50-149	150-299	300-499	500& above	Total
1.	Adhesives	22	3	-	-	-	25
2.	Adhesive Tapes	1	-	-	-	-	1
3.	Auto & Cycle Parts	22	-	1	-	-	23
4.	Beltings	1	-	-	-	-	1
5.	Cables	-	-	-	-	-	-
6.	Dipped Goods	15	1	-	-	1	17
7.	Ebonite Product	2	1	-	-	-	3
8.	Extruded Rubber Goods	11	1	-	-	-	12
9.	Foam Products	65	7	-	1	1	75
10.	Footwear Products	328	15	3	1	4	351
11.	Gloves	21	6	3	2	1	33
12.	Hoses	3	-	-	-	-	3
13.	Latex Threads	49	4	-	-	1	54
14.	Leather Boards	-	-	-	-	-	-
15.	Modified Forms of Rubber	-	1	-	-	-	1
16.	Moulded Rubber Products	42	2	-	-	-	44
17.	Rubber Bands	133	-	-	-	-	133
18.	Rubber Covered Rollers	10	1	-	-	-	11
19.	Rubberised Coir Jute& Woollen Products	50	4	2	1	1	58
20.	Rubberised Fabric Products	-	-	-	-	-	-
21.	Rubber Linings	5	1	-	-	-	6
22.	Rubber Mattings	33	3	3	1	-	40
23.	Rubber Sheetings	7	2	-	1	-	10
24.	Rubber Tubings	-	-	-	-	-	-
25.	Sports Goods	2	-	-	-	-	2
26.	Surgical & Pharmaceutical Products	3	1	-	-	-	4
27.	Thread Rubber Products	193	95	19	1	3	311
28.	Tyre, Tube& Flaps	35	3	2	-	2	42
29.	Miscellaneous Items	22	-	2	-	2	26

Source: *Directory of Rubber Goods Manufacturers in India1998-99*, Section Kerala, Rubber Board, Kottayam

Table IV. 17
Trends in Growth of Rubber- Based Manufacturing Units in Kerala (1985-86 to 1998-99)

Year	No. of units	Consumption of NR (M.T.)	% increase in consumption
1985-86	599	28341	46.97
1986-87	630	31445	10.95
1987-88	711	39337	25.09
1988-89	742	43225	9.88
1989-90	767	45800	5.95
1990-91	816	55365	20.88
1991-92	893	51197	(-) 9.10
1992-93	909	52462	2.47
1993-94	891	54108	3.14
1994-95	880	64660	19.50
1995-96	947	75200	16.30
1996-97	994	67144	(-) 10.71
1997-98	1021	68542	2.08
1998-99	1286	-	-

Source: *Directory of Rubber Goods Manufacturers in India 1998-99*, Kerala Section, Rubber Board, Kottayam.

Reasons for the low percentage of rubber consumption in Kerala.

A logical conclusion by State administrators is that the position of rubber consumption in the State should increase from the present 15 percent to 50 percent or so. But this is not materialising and there are several reasons for this. It is noticed that 45 percent of the rubber consumed in the country is in tyre and tube production and 15 per cent in cycle tyre industry. There are only few tyre factories in the State. All the other tyre factories are located outside the State. Major cycle tyre and belt manufacturing units are also situated outside the State. These units together account for over sixty five percent of rubber used in India. It is true that in a rubber-based industry natural rubber is an important raw material. But along with this a number of other costly raw materials are also needed. Carbon black, Nylon, Terelene, Synthetic rubbers, Rubber chemicals, process oils etc. are essential raw materials for the industry.

So the contention that all rubber produced in the State should be used here itself is not reasonable. Factories already working in other regions in the country cannot be closed down. In a truck tyre costing around Rupees seven thousand, the contribution on account of rubber will be only in the range of 10-12 percent. Cost of some other raw materials like nylon steel cord is even higher than that of rubber. Thus many of these industries, which are classified under rubber- based industries, can also be, considered as industries based on other raw materials. So a stern attitude that all the rubber produced in the State should be covered to products within the State will not be accepted by any of the producers of other raw materials used in rubber industry. Rubber products are used in a number of industries like fertilisers, steel, petro-chemicals and engineering. Large factories of this type are concentrated near big cities of India. Many rubber industries established near Mumbai, Delhi and Kolkata are thus serving as ancillary industries to big industries operating near these cities. Products like tank lining, high- pressure hoses, engine mounts, rubber covered rollers, various types of gaskets and seals are all products needed in such heavy industries. Even now nontyre rubber component needed in automobiles are mostly manufactured by small units functioning near automobile factories.

The industries that can be started

It is worthwhile to see the type of industries that can be started advantageously in the State. There are several foam rubber units in the State. Many of these units are not using even half of their installed capacity. Similar difficulty is observed in the case of tread rubber producers also. Poor capacity utilisation in these industries is mainly due to the excise duty structure. When the turnover of the industries is low the rate of excise duty levied also is low. So many tread rubber factories are restricting production below 25 percent to escape from the excise net. Suitable policy change at State and Central Government are needed to encourage full capacity utilisation in factories already established. Quality of products should be regulated through

approved standards and systems. Products like various types of foam cushions, mattresses, retreaded tyres, rubber bands and moulded rubber goods have good export potential. Small manufacturers have difficulties in independently entering export market. They need support in product presentation, packing, market identification and in practising fixed delivery schedules. It is desirable to encourage private trading companies in this area. These companies can ascertain requirements of the international buyers and identify small- scale industries in the State, who can meet such requirements. Policies to be adopted for ensuring healthy growth of each type of existing small- scale industries can now be examined.

Footwear

There are many types of footwear with rubber components, from soles to heavy-duty boots. In the past, rubber was used in making utilitarian types of footwear. Now rubber footwears have become an established commodity in fashion wear. Hawai Chappals and micro-cellular soles are the popular products in footwear units of Kerala. Over 160 hawai chappal units are situated in Kerala. Some small units produce only chappal straps. Hawai chappals are the cheapest foot wears available and so this industry can remain viable for many more years. Export of footwears also is an area where the entrepreneurs in the State have to pay attention. Many Southeast Asian countries have made remarkable progress in footwear manufacture and its exports.

Tread rubber

In Kerala there are over 180 units manufacturing this item. Production of tread rubber is simple and only a low level of technology is needed. The product is now facing competition from pre-cured tread. Small industrialists are aware of this reality and are making efforts to improve quality. Quality of products from small- scale tread making units can be

improved by using rubber compounds prepared in centralised mixing units. Such units will be power efficient and will give compounds of consistent quality.

Latex products

Most of the products manufactured from latex are in small-scale sector. It is to be observed that Kerala is the most suitable place in India for manufacturing rubber products based on latex. When latex is to be transported to other regions for product manufacture, they have to carry lot of water also with it and this will increase the cost of products manufactured. Latex based industries are less power intensive. In Kerala, where there is serious shortage of power, this type of industries should find greater acceptance. In Kerala there is scope for enhancing the manufacture of rubber goods from latex like nipples, balloons, foam products, condoms, rubber bands, and various types of gloves. Two high-technology products that can be manufactured from rubber latex are high-count rubber threads and Catheters. Main manufacture of rubber thread in the world today is an Italian company Fillatice. Polyurethane based rubber thread is competing with natural latex based rubber threads in US and European markets. It is likely that restrictions on use of polyurethane in articles coming in contact with human activity will be imposed by environmentalists. This situation can remarkably increase the consumption of natural rubber thread in the western world. Catheters are another interesting group of products. There are no high quality catheter manufacturers in India. Malaysia is world leader in this field. Considering the vast market in Europe and America, there is potential for starting production unit for producing catheters particularly in Cochin Special Economic Zone in Kerala.

Moulded rubber products

Products like automobile bushes, oil seals, pipe rings, sponges, sporting goods, door stoppers, furniture, shoes, mud flaps, tyre flaps, medicinal bottle caps, rail pads etc. are moulded rubber products. Production of moulded rubber products is not very popular in Kerala. Most of these are needed for industrial applications. So any Kerala based manufacturer of these will have to find market in other industrial centres. However, there is scope for export of these types of products, which are labour intensive. But proper market survey on each type of product and its export potential has to be made for exploiting this possibility.

Rubber-wood products

Rubber wood after appropriate treatment has been successfully tried for furniture, window and door shutters and frames, cabinet ware, plywood, splints, matchboxes etc. Compressed rubber wood has also been used for shuttles, bobbins, and such other textile accessories as a substitute for maple and imported hornbeam (Sekhar, 1989). This eco-friendly wood can add magic to furniture of any description. The rubber-wood furniture comprises everything from dining tables and chairs, wardrobes, kitchen cabinets, office furniture and computer tables. It also includes high quality finger joints, and laminated beams. Virtually showing the right path to the investment starved Kerala with a variety of products in collaboration with foreign companies, the Kannur-based co-operative, Rubco, is making a monthly turnover of about Rs.3 crore. It has recently tied up with Long Huat, a Malaysian company, for rubber wood furniture manufacturing, perhaps for the first time in the country. The unit, which makes furniture out of treated eco-friendly rubber wood, is mostly export oriented. The message that Rubco sends out is clear: even a unit started in the co-operative sector on a small-

scale can succeed and can attain international attention, provided it is run properly and with dedication.

Construction material

Rubber has, over the years, found a variety of new applications in many fields apart from its conventional uses. Its use in construction industry has generated a lot of interest in recent times. The use of rubber in buildings, both for construction and for decoration, has become popular and the advantages of low weight, better performance, maintenance-free structure and lower cost, may further make it a preferred material in the construction industry. Rubber can also be used extensively for producing bearings, on which the superstructure can rest and get protection from unwanted vibrations and even earthquakes. Concerted efforts are immediately required on a time bound basis by the rubber technologists and architects for designing and developing natural rubber based isolators capable of protecting buildings and structures from earthquakes (Gopalakrishnan, 2001).

Incorporation of 2-4 per cent NR in bitumen improves its properties substantially and helps it become an excellent binder of mettle and sand. Use of Rubber-Modified Bitumen (RMP) in road construction yields better resistance to fatting up under hot conditions and more resistance to cracking under cold conditions. Since rubberisation of roads can bring about savings with safety and can lead to increased consumption of rubber, there is potential for increased usage of rubber in road construction in the State.

CHAPTER -V

SOCIO-ECONOMIC AND MOTIVATIONAL SETTINGS OF ENTREPRENEURSHIP: FINDINGS OF THE STUDY

Before attempting to give the findings of the study, it is imperative to know the industrial and entrepreneurial scene of the Kottayam and Ernakulam districts. Hence, this chapter consists of two divisions, viz., the first part describes briefly the industrial and entrepreneurial scene of the study region and the second part explains the analysis of the study.

Kottayam District -A Profile

Kottayam district is situated in the South Central Kerala. It is surrounded by Ernakulam district in the north, Idukki district in east, Pathanamthitta district in the south and Alappuzha district in the west. The district has an area of 2204 sq. km. The District occupies approximately 5.6 percent of the geographical area of Kerala. As per the usual topographical classification applicable to the State, the District has three regions viz., the Low Land, Mid Land, and High Land. The Low Land region mainly consists of Madappally, Pallam, and Vaikom Blocks where the land is plain and sandy. Main crop in this area is coconut. The Mid-Land of the District is constituted by Community Development Blocks of Pampady, Lalam, Uzhavoor, Kaduthurithy and Ettumanoor. The High Land region is consisted by Kajirappally, Erattupetta and Vazhoor Blocks. The District consists of 5 Taluks viz., Kanjirappally, Changanacherry, Kottayam, Vaikom and Meenachil. The three major rivers in the District are Meenachil, Muvattupuzha and Manimala. As per the 2001 census, Kottayam district has a population of 19.53 lakhs. The density of population is 884 persons per sq. km. as against the State average of 819.

Kottayam district –the land of lakes, the land of letters, the land of latex- is blessed with a good network of roads, rails and water transport facility. Rail connections and nearness to industrially developed district like Ernakulam contribute much to the speedier industrial and economic development of the District. Most parts of the District get reasonably stable and steady power. In some areas low voltage problems still exist during peak hours. This affects the growth of industries particularly rubber and plastics where electricity plays a vital role in the manufacturing process. The District is covered by the Kerala Power Grid consisting of 220 KV, 110 KV, and 66 KV transmission feeders. The Rubber Board and the Rubber Research Institute of India is situated in Kottayam. The District has good banking facilities. The State Bank of Travancore is the Lead Bank of the District. Offices of the Kerala State Financial Corporation, NABARD etc. are also functioning in the District. There are around 50 branches of District Cooperative Banks opened in the District. Kottayam district possesses sufficiently developed human resources served by a vast network of educational institutions including Mahatma Gandhi University Headquarters. Kottayam is the print capital of Kerala. A close look at the facts of economic development clearly indicates that the Kottayam district remain far way behind in industrial development than the State as a whole which itself lies at a low level of industrialization process. At present there are 16 large and medium scale industries in the District. They comprise mainly Rubber- based units, Newsprint factory, Cement plant and a few chemical and textile units. This is shown in Table V. 1.

Table V. 1.

List of Large and Medium Scale Units in Kottayam District

No. Name and Address of the Unit	Product
1. Hindustan News Print Ltd., News Print Nagar, Velloor.686 616	Newsprint
2. Kottayam Textiles, Kurumullor P.O Kanakkary –686 632	Cotton Yarn
3. Formix Industries, Punnathura, Ettumanoor- 686 631	Rubber mixing
4. Kohinnooor Roller Floor Mills, Ettumanoor- 686 631	Maida, sooji, wheat flour
5. Diamond Roller Flour Mills (p) Ltd, Pallom P.O., Chingavanam	Maida, sooji, wheat flour
6. Midas Precured Tread PVT Ltd., Industrial Estate, Ettumanoor- 686 631	Precured Tread Rubber
7. MRF Limited, Vadavathoor p.o. Kottayam. 686 010	Tread Rubber, Automobile tubes and rubber products
8. Premier Rubber Products, Ruby Nagar P.O. Changanacherry.	Cycle Tyres
9. Premier Latex Products, P.B. No. 23, Kottayam.	Rubber Gloves
10. Travancore Electro Chemicals Industries Ltd., Chingavanam p.o.	Calcium Carbide, Ferrous Silicate Acetylene Block, Disuphonisation Components
11. Indian Crumb Rubber Factory, Puliyannur P.O. Palai	Crumb Rubber
12. The Canara Paper Mills (P) Ltd., Chettipuzha, Changanacherry- 686104	Kraft Paper
13. The Travancore Cements Ltd., Nattakom, Kottayam.	White Cement, Cement Paints
14. Ernakulam Regional Co-operative Milk producers Union, Vadavathoor, Kottayam	Pasteurisation Plant Milk and its products
15. Padinjarekkara Agencies Ltd., Chennappady Latex Factory, Vizthithode P.O. Kanjirappally	Centrifuged Rubber Latex
16. Padinjarekkara Agencies Ltd., Kottayam Latex Factory, Kodimatha, Kottayam	Centrifuged Rubber Latex

***Source**: District Industries Centre, Kottayam.*

Rubber and plastics products constitute the major segment of the small-scale units in the District. This is followed by Food processing industries, Wood based industries, paper and printing and chemical industries. Out of the total 26458 SSI units in the District 562 units have been identified as sick by the Directorate of Industries and Commerce, Thiruvananthapuram as on 31st March 2002. Rubber Board and Rubber Research Institute of India are in Kottayam offering all sorts of technical assistance to rubber-based industries. Due to these facilities Kottayam district accounts for the maximum number of rubber-based industries in Kerala. The total number of registered SSI units in the District as on 31st March 2002 are 26458 with a capital investment of Rs. 29957.54 lakhs. Out of this the women SSI units and SC/ST units were 4241 and 561 respectively. The total value of goods and services produced by the SSI units in the District as on 31st March 2002 was amounted Rs. 64608.64 lakhs and provided employment to 88212 persons for the same period (Government of Kerala, 2002).

There are two major Industrial Estates functioning in the District, one at Ettumanoor and the other at Changanacherry. Both these Estates are being managed by SIDCO. In the major industrial estate at Ettumanoor 54 units have been allotted accommodation. Out of this, 14 units are not functioning at present. Units in this Estate are engaged in the production of rubber-based products, mechanical items, plastics, drugs, etc. At Changanacherry Industrial Estate 24 units are functioning. This Estate is called Functional Estate for Rubber &Plastics. A Common Facility Centre maintained by the Department of Industries, Government of Kerala, and a Field Testing Station for Rubber and Plastic products under the Ministry of Industry and Commerce, Government of India are functioning with in the industrial estate for the service of the units there.

Twelve mini industrial estates have been set up in the District. Out of these, three are owned by SIDCO and the remaining of them is owned by co-operatives. The number of sheds, available in each estate is 10. Thus the total number of shed available is 120. Ninety units are functioning in these sheds. In addition to this, there are three Industrial Development Plots (Areas) at Poovanthuruthu, Athirampuzha and Vaikom. It is now clear that Kottayam district has not made much headway in the industrial sector comparing with neighouring district like Ernakulam. Thus, the formulation of any strategy of industrial development will have to be based on the specific characteristics of a particular district.

Ernakulam District – A Profile

Ernakulam district was formed in 1958 by bifurcating the regions from Thrissur and Kottayam districts. Later in 1972, a part of the District was transferred to newly formed Idukki district. The District comprises parts of former Travancore, Cochin and Malabar States. The District is bounded by 30 Kms of coastal belt of Arabian Sea on the West, Kottayam and Allappuzha districts on the South, Idukki on the East and Thrissur on the North. The area of the District stretches 2407 Sq.Kms which accounts to 6.19 percentage of the total area of the State. The strategic location of the District has contributed to the economic potential and development of the District. The headquarters of the District is at Kochi (Cochin). Kochi often described, as the "Queen of the Arabian Sea" is an important port city in India and it is equidistant from Australia and Europe, Japan and Africa and South-East Asia and Middle East. The High Court of the State is situated at Kochi.

For administrative purpose, the District is divided into two revenue sub-divisions viz. Fort Kochi and Muvattupuzha. The District has 122 revenue

villages in 7 Taluks. Kochi, Kanayannur, Aluva and Parur Taluks come under Fort Kochi sub-division and the Muvattupuzha sub-division comprises of the remaining three Taluks viz. Kunnathunadu, Muvattupuzha and Kothamanglam. For development purposes the District is divided into fifteen Community Development Blocks, eight Muncipalities, one Corporation and eighty seven Panchayaths. According to the topography of the land, the District can be divided into three natural regions viz. low-elevation, medium elevation and high elevation regions. The medium elevation area accounts for 67 percentage of the total area accounts for only 24 percent and 9 percent respectively. The most important rivers in the District are Periyar (the longest river in the State) and Muvattupuzha rivers.

Entrepreneurial Dimensions in the Region

Ernakulam is the most industrially advanced district in the State and often called the industrial and commercial capital of the State. The District has the maximum concentration of large/medium industries. The major industrial estates are located at Palluruthy, Vazhakulam, Edayar, Erumethala, Angamally and Kalamasserry. There are 15 mini industrial estates workind in the District. Locational advantage coupled with a comparatively better developed infrastructure system could be attributed for this large concentration of large and medium scale industries. The cluster effect may have worked for the faster growth of small-scale industries as well. A natural harbour and a seaport, airport, along side rail and road transport may have all worked together for conducive climate for industrial development in the District. The economic minerals of the District include magnetic iron ores, glass sand, limeshell, clays, graphite and building stones. Iron ores are found in isolated patches in Muvattupuzha and Kunnathunad taluks. Glass sand occurs at Eroor, Puthiyakavu, Panangad and neighouring places and at Palluruthy. Limeshell

exploited from Varapuzha and Kodungallur lakes is used for lime burning. Extensive deposits of clay suitable for the manufacture of tiles occur in Alwaye and Kanayannur taluks and they are exploited for the manufacture of tile and bricks. Fairly good quantity of China clay is found at Amballur and Mulanthurithy.

There are 46 large and medium industries in the District providing direct employment to more than 40,000 persons. Out of 18 Government of India Companies functioning in the State, 7 are located in this District. They are Cochin Refineries Ltd., Cochin Shipyard Ltd, FACT, Aluva, Indian Rare Earths Ltd., Hindustan Insecticides Ltd., Udyogamandal, HMT ltd, Kalamassery, Hindustan Organic Ltd. The factories that provide employment for more than 1000 include FACT, Aluva, FACT Engineering Design Organization Ltd., Cochin Refineries Ltd., Transformers and Electricals Ltd., Kerala, Indian Rare Earth Ltd., Kerala Electricals and Allied Engineering Co. Ltd., Indian Aluminium Company Ltd., Cochin Shipyard Ltd., Travancore Rayons Ltd., Hindustan Machine Tools, etc. Details of products manufactured, employment of large and medium industries in the District are given in Table V. 2.

Table V. 2
Details of Large and Medium Units in Ernakulam District

Name of the Units	Product	Employm
1. Intex International Ltd.	Cloth Textiles	73
2. Shree Sakhi Paper Products Ltd.	Craft Paper	170
3. Cryo Caskets India Pvt Ltd	Refrigerator Casket	50
4. Gyntnoto Industrial Chemicals	Spices, Oil,	200
5. Harmony Spices Ltd.	Process & sterilize spices	-
6. Emson Treat Wood Ltd	Sawn treated and seasoned rubber wood	44
7. O/E/N India Ltd	Relays	479
8. Binani Zinc Ltd.	Electrolytic grade	575
9. Carborandum Universal Ltd.	Alloy	356
10.Are Tech Power Products	Switching Mode	120
11. FACT	Fertiliser	8709
12. Kerala Copper and Chemicals	Cathode Copper	70
13. Hindustan Insecticides Ltd.	DDT, BHC, Endosul Fan	735
14. TCC	Hydrolic Acid	103
15. O/E/N India Ltd.	Electrical Apparatus	48
16. O/E/N Connectors Ltd.	Electrical Apparatus	83
17. OEL Informatics Pvt. Ltd.	Software for computer equipment	49
18. Tamilnadu Ammonia Pvt. Ltd.	Anyhydraw Ammonia	-
19. Kairali Dyes and Chemicals Pvt. Ltd.	Textiles Dyes	25
20. Chemmannur Gold Refineries Pvt. Ltd.	Gold processing	34
21. Edathala Polymers	Crumb rubber	56
22. Shaliya Industrial Enterprises	Camel Back, Tread rubber	51
23. Sastern Treads Ltd.	Camel Back, Tread rubber	120
24. Crescent Crumbs	Crumb rubber	171
25. Mudakkalil Granite Pvt. Ltd.	Crushed granite metal	57
26. Alwaye Techno rubber	Crumb rubber	50
27. Watts Components Ltd.	Ceramics disc capacitor	55
28. Laincy Food Pvt. Ltd.	Preserved fish	37
29. Star Agro Refineries Pvt. Ltd.	Vanaspathi	105
30. Cochin Minerals & Rutiles Ltd.	Ferric chloride	40
31. Anand Oil Extractions Ltd.	Writing and printing paper	175
32. TCM Co. Ltd.	Acid Sodium	-
33. Oric Brass Crumb Rubber	Crumb rubber	112
34. Merchem Ltd.	Chemical Compounds	80
35Cochin Refineries Ltd.	Diesel, LPG, Motor Sprit, Naphtha, Kerosene	1571
36. FACT Engineering. Design Organization Ltd.	Caprolactum, Urea(C), Dyammoniam Phosphate	5856
37. Modern Food Industries Ltd.	Bread,Bran, Cake	223
38. Transformers and Electricals Ltd. Kerala	Transformers, Gas Circuit Breakers etc.	1687
39. Indian Rare Earth Ltd.	HLRE Cloride, Trodosium Phosphate, Rare Earths Fluride, Rare Earth Oxide.	-
40. HMT	Machine Tools	2038
41. Anand Water Manufacturing Ltd.	Water Meters	-
42. Kerala Electrical &Allied Eng. Co. Ltd.	Distribution Transformers, Steel Structure, Electroplating, Accessories etc.	1546
43. Traco Cable Co. Ltd.	AAC & ACSR, Conductors (PVC Covered and bare copper covered)	798
44. Kerala Agro Machinery	Power Tiller Tyres	546
45. Premier tyres	Primary Metal, Carbon Paste, Wire Road,	-
46. Indian Aluminium Co. Ltd.	Extrusion	1298

Source: *Industrial Potential Survey, Ernakulam District, Small Industries Service Institute, Trichur.*

Small-Scale Industries

The small-scale industries sector in this District has shown substantial growth during last decade. As on 31-3-2002 there were 33627 registered SSI units in the District with an investment of Rs.82661.25 lakhs and providing employment for 157483 persons (Economic Review, 2002). With respect to number of the units and the employment provided by these units, the District's share to the State was 13.03 percent and 13.42 percent respectively. Out of a total number of 33627 SSI units registered in the District, 4564 were women industrial units and 855 units were run by SC/ST categories. Out of 1546 sick units, 124 units so far been revived. Prominent industries in the District are rubber based industries, food-processing industries, forest based industries, engineering, chemicals, textiles, and mineral based industries. Rubber based and forest based industries are scattered all over the Taluks in the District. Mineral based units are concentrated in Aluva and Kochi Taluks. More than 90 percent of electrical units are concentrated in Kanayannur and Kunnathunadu Taluks. Taluk-wise analysis of the industrial scenario in this District reveals that Kanayannur Taluk rank first with respect to number of SSI units as well as employment. Kochi Taluk rank second with to number of units as well as employment. Kalamassery, Edayar, Palluruthy and Vazhakulam are the major industrial estates in the District.

Though the District ranks first in industrial development of Kerala, there are still considerable gap in the requirement and availability of power, escalation of land value, delay of payments to ancillary units, alarming rate of sickness and very poor pace of rehabilitation due to various reasons including availability of sufficient bank finance, market competition and not so cordial labour management relationship. Low voltage and frequent power cuts is a regular feature. Due to high escalation in the land value, prospective entrepreneurs are required to make heavy investment in land and building.

Technological obsolescence is still widespread in the small-scale sector. Higher taxation rate have also been reported as a major problem affecting profitability of SSI units.

Socio -Economic settings of entrepreneurs: Findings of the Study

Theoretically, the study has traversed through the various stages of development. At this stage it is quite appropriate to empirically test the hypotheses and to arrive at the relevant decisions. Keeping this fact in view, the present section is devoted to deal with socio-economic particulars of the entrepreneurs chosen for the study. Similarities and differences between the two entrepreneurial groups - successful entrepreneurs (Numbers: 60) and unsuccessful entrepreneurs (Numbers: 60) have been highlighted. The results have been interpreted based on the findings of the socio-economic questionnaire covering age, education, occupation, experience, business interests and background, religion, caste, place of birth, marital status, size of establishment in terms of capital employed, training needs, number of employees and sales turnover.

Founder of business

The entrepreneurs of small-scale rubber-goods manufacturing industry in Kottayam and Ernakulam districts are mostly first generation entrepreneurs – they formed 85.50 per cent of successful and 87.75 percent of unsuccessful entrepreneurs. Only 7.25 per cent of successful and 5.75 percent of unsuccessful entrepreneurs mentioned that their business was started by their father or grandfather.

Table V. 3: Founder of the Business

(Figures in per cent)

Founder	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No.60)
Himself	85.50	87.75
Father/Grandfather	7.25	5.75
Brother	5.75	5.25
Partner	1.50	1.25
Total	100	100

df = 3 Table Value at 0.05 level =7.81 Chi Square test statistic = 0.2478
P-value* = 0.9695 Accept Ho Difference Not Significant

Since the calculated value is less than the table value we accept the null hypothesis. It is confirmed by the fact that the P- value is greater than 0.05. Analysis of Table V. 3 reveals there is no significant difference between successful and unsuccessful entrepreneurs as founding of business is concerned.

Age

There is no significant difference found in the age of successful and unsuccessful entrepreneurs in this study. The age of entrepreneurs ranged from 23 to 61 years with the average for successful being 38.2 years and for unsuccessful being 39.4 years (Refer table V. 4).

Table V. 4: Age of Entrepreneurs (in Years)

	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Mean	38.20	39.40
Standard Deviation	6.43	7.65

Z = 0.93 P- value =0.1762 Difference between Means = Not significant

**P-value is the probability of observed value of the Statistic greater than the calculated value under the null hypothesis. If the P-value is greater than0 .05 we accept Ho. If it is less than0 .05 we reject Ho. Thus P<0 .05 → Significant. P>0.05 → Not Significant*

Since the P-value is 0.1762 which is greater than 0.05. Hence we accept the null hypothesis that there is no significant difference between the means.

Education

The number of years of formal school education received by successful entrepreneurs did not differ significantly from that of unsuccessful entrepreneurs. The average year of schooling of the successful and unsuccessful entrepreneurs was ten years- they had completed SSLC examination. Studies by Papanek (1971) on 'Pakistan entrepreneurs' and Babu (1978) on 'Sociological Characteristics of Small-Scale Industrialists of Kerala' have shown that education does not play a significant role in the making of an entrepreneur or in contributing to his success. The result of the present study supports the findings of Papanek and Babu. Sexton and VanAuken (1982) reported that the successful and unsuccessful entrepreneurs differed significantly in the level of formal education attained -with the successful group being more educated. The findings of the present study given in table V. 5 also support Sexton and VanAuken's (1982) findings.

Table V. 5: Education level

(Figures in per cent)

Education	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Secondary	12.25	25.5
Plus Two/ Pre-Degree	24.75	27.50
University/ Technical	63.00	45.00
Total	100.00	100.00

df = 2 Table value at 0.05 level = 5.99 Chi Square test statistic = 7.5192
P-value = 0.0233 Difference is Significant

Since the calculated value is greater than the tabled value at 0.05 level we reject Ho. It is confirmed by the fact that P-value 0.0233 is < 0.05.

Annual Income

The annual income of entrepreneurs chosen for the study during 2001-02 averaged from Rs 6000 to Rs 20 lakhs. The annual income of successful entrepreneurs averaged Rs 2, 54,560 and that of unsuccessful entrepreneurs Rs. 62,440. The successful entrepreneurs were earning an average, about 75 per cent more than the unsuccessful ones (Refer table V. 6). The differences in annual income of the two groups were found to be statistically significant.

Table V. 6 Annual Income

(Rs. in Thousands)

Statistic	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No.60)
Minimum	6	6
Maximum	2000	60
Mean	36.29	18.56
Standard Deviation	31.2	9.85

Z = 4.185 P-value =0.0000 <0.05 Reject Ho

Difference between Means is significant

Experience

One can raise a question whether success of entrepreneur is related to one's previous job experience. Carrol (1965) and Lamont (1972) have pointed out that previous job experience is probably an important factor in the success of manufacturing units.

Table V.7: Experience of Entrepreneurs (in years)

Statistic	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No.60)
Mean	14.5	13.92
Standard Deviation	7.23	7.64

Z = 0.427 P-value = 0.3336 >0.05 Accept Ho

Difference between Means -Not Significant

The experience of entrepreneurs in the small-scale rubber goods manufacturing ranged from 6 months to 35 years. The average years of experience of successful entrepreneurs were 14.5 and that of unsuccessful entrepreneurs was 13.9 years. The difference between the number of years of experience of these two groups is not statistically significant. Table V. 7 suggests that experience of entrepreneur in the field alone does not guarantee success in ventures.

Inter-Generational Changes in Occupation

Table V. 8 suggests that successful and unsuccessful entrepreneurs exhibited intergenerational changes in their occupations. Both the groups had moved from their traditional occupation i.e. agriculture to business. The successful and unsuccessful entrepreneurs did not differ significantly with respect to their traditional and father's occupations.

Table V. 8: Inter-Generational Changes in Occupation
(Figures in Percent)

Occupation	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No.60)
Agriculture	69.50	70.25
Business	25.50	26.50
Service	5.00	3 .25
Total	100	100

df= 2 Table value at 0.05 level =5.99 Chi Square test statistic = 0.3945
Accept Ho Difference -Not Significant

Previous Jobs Held

Approximately one out of every two entrepreneurs surveyed, did not have any prior job record. They have started their career straight as entrepreneurs. Table V. 9 reveals no significant difference between successful

and unsuccessful entrepreneurs with regard to prior job experience. Both the groups held previous jobs related to present entrepreneurial activity.

Table V.9: Previous Jobs Held

(Figures in percent)

Jobs held in the past	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No.60)
Manager in Rubber factory	23.5	13.75
Worker in Rubber factory	17.25	30.5
Clerks/ Assistant	7.5	9.25
No jobs held	51.75	46.5
Total	100.00	100.00

df = 3 Table value at0.05 level = 7.81 Chi Square test statistic = 6.6971
P-value = 0.0824 >0.05 Accept Ho Difference - Not Significant

Membership in Organization

Besides their business, the entrepreneurs were members of and held positions in several organizations connected with business, politics, recreation and religion. Participation in organizations enables the entrepreneurs to develop contacts with other businessmen and they contribute increased status and prestige to the entrepreneur in the society. The successful entrepreneurs, compared to unsuccessful entrepreneurs, had more participation in business (90.5 per cent versus 76 per cent), social (36.5 versus 16) and recreational organizations (10 per cent against3.3 percent) and slightly lower (7 per cent versus 10 per cent) in political organizations (Refer table V. 10).

Table V. 10 Positions Held in Organizations-Nature of Organization

(Figures in per cent)

Nature of Organizations	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Business	90.5	76
Social	36.5	16
Recreational	10.0	3.3
Political	7	10.0
Religious	10.0	7

Note: The figures are not additive, since an entrepreneur may hold positions in more than one organization. Thus multiple responses were allowed.

With respect to the number of organizations with which the entrepreneurs had involvement, the successful and unsuccessful entrepreneurs differed significantly. The successful entrepreneurs have involved in more organizations (table V. 11). The maximum organizations in which the successful entrepreneurs have participation was seven and that of unsuccessful entrepreneurs, it was five.

Table V. 11: Positions Held in Organizations – Number of Organizations

(Figures in percent)

Number of Organizations	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No.60)
1	40.5	57.5
2	17.25	14.25
3	18.25	5.75
4+	9.2 5*	1.75@
No membership in any organization	14.75	20.75
Total	100	100

* Maximum seven organization
@ Maximum five
df = 4 Table value at 0.05 level = 9.49
Chi Square test statistic = 15.8728
P- value = 0.0032
Difference Significant

Since the calculated value is greater than the tabled value at 0.05 level, we reject the null hypothesis. Since P-value is < 0.05 it confirms the above decision. The successful entrepreneur's participation in various organizations enables him to get in touch with various senior executives of other firms and influential businessmen. Contact with such persons is essential for successful entrepreneurs as they have considerable power on various government bodies with which the entrepreneurs have to deal with (Sharma, 1975).

Religion

There is no significant difference noticed among successful and unsuccessful entrepreneurs with respect to religion. Nearly 55 per cent of the entrepreneurs were Christians, Hindus and Muslims constituted 25.75 and 19.25 per cent respectively.

Caste

There is no significant difference noticed within the Hindu caste structure for success in entrepreneurship. The Syrian Christians were found to be the prominent caste among the rubber based entrepreneurs. Traditionally, they belonged to the agricultural class and were engaged in the cultivation of rubber. Other castes included the Ezhavas and Nairs among the Hindus. The caste of the entrepreneur was not the factor for success of the entrepreneur or otherwise. Refer table V. 12.

Table V. 12: Caste of Entrepreneurs (Figures in per cent)

Caste	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No.60)
Syrian Christians	61.5	62.25
Ezhava	16.75	11.75
Other Hindus (Nair, Brahmin)	17.25	20.25
Muslim	4.75	5.75
Total	100	100

df = 3 Table value at 0.05 level = 7.81 Chi-square test statistic = 1.2742
P-value = 0.7353 Difference Not Significant

Since the calculated value is less than the tabled value we accept the null hypothesis. It is also confirmed by the fact that the P-value is greater than 0.05

Weber (1930) observes that 'Protestant Ethic' was absent in the religious belief system of Hinduism, Islam and other religions of the Asian continent. The present study suggests that Indian religious system does not stand in the way of members of the society becoming entrepreneurs.

Place of Birth

The entrepreneurs hailed mostly from Kottayam and Ernakulam districts and its surrounding areas. Entrepreneurs hailing from other states and engaged in rubber-based industry in the region under study were negligible. See table V. 13.

Table V. 13: Place of Birth (Figures in per cent)

Place of Birth	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
1. Kottayam and Ernakulam	63.50	71.75
2. Outside Kottayam & Ernakulam district but within the state of Kerala	33.00	25.25
3. Other States	3.50	3.00
Total	100	100

df = 3 Table value at 0.05 level = 7.81 Chi-square test statistic = 1.5728
P-value = 0.4555 Difference Not Significant
Since the calculated value is less than the table value at 0.05 level, we accept Ho.
As P-value is 0.4555 > 0.05 it confirms the above decision.

The percent of successful and unsuccessful entrepreneurs hailing from Kottayam and Ernakulam districts were 63.50 and 71.75 respectively. The difference was not statistically significant. This is contrary to the findings of the study of Papanek (1971) which found that most of the successful entrepreneurs were immigrants.

Marital Status

There is no significant difference noticed among entrepreneurs with respect to their marital status. About 70.75 percent of successful entrepreneurs and about 75.00 percent of unsuccessful entrepreneurs were married. Others were single. The married entrepreneurs had on an average two children per family.

Nature of Ownership of Enterprise

There is no significant difference found in the nature of ownership of business activity engaged by the two groups of entrepreneurs. The partnership, proprietorship, and private limited companies are the pattern of ownership found in all the sample units in that order.

Number of Years the Factory has been in Business

The number of years the factory has been in business ranged from 3 to 35 years. The average age of successful entrepreneurs' factory was 14.5 years and that of unsuccessful entrepreneurs' factory was 13.25 years. The difference was not statistically significant See table V. 14.

Table V. 14: Number of Years the Factory has been in Business

Statistic	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No. 60)
Minimum	4	3
Maximum	32	35
Mean	14.5	13.25
Standard Deviation	7.32	7.45

Z = 0.92 P-Value 0.1788

Difference between Means - Not Significant

Since the p-value 0.1788 which is greater than 0.05 we accept the null hypothesis

Products Manufactured

The products manufactured by entrepreneurs included footwear products, auto & cycle parts, dipped goods, foam products, gloves, thread rubber products, tyre, tube & flaps, moulded rubber products, rubber bands, rubber mattings, rubber sheetings, crumb rubber, and rubberized coir products.

Table V. 15: Products Manufactured (Figures in percent)

Products	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
1. Auto &cycle parts	2.6	2.5
2. Dipped goods	1.4	1.2
3. Foam products	4.75	4.5
4. Footwear	23.5	21.7
5. Gloves	2.2	2.1
6. Moulded rubber products	6.9	7.2
7. Rubberized coir products.	6.2	6.1
8. Rubber bands	8.9	8.3
9. Rubber mattings	14.5	12.75
10. Rubber sheetings	0.8	0.9
11. Tyre, tube &flaps	11.5	13.2
12. Thread rubber products	16.75	19.55
Total	100	100

df =11 Table value at 0.05 level = 19.7 Chi-square test statistic = 0.5775
P-value = 1.0000 >0.05 Accept Ho Difference Not Significant

Since the calculated value is less than the tabled value we accept the Ho. It is confirmed by the fact that the P-value is greater than 0.05.

The table V. 13 reveals that though there was no significant difference in the products manufactured by these entrepreneurs, the successful entrepreneurs seemed to produce more varieties of products.

Number Employed

The number of employees in the firms of entrepreneurs surveyed ranged from 2 to 250. Successful entrepreneurs were found to have bigger business firms employing larger number of employees.

Table V. 16: Number Employed by Entrepreneurs during 2001-02

Statistic	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Minimum	2	2
Maximum	250	55
Mean	32	16
Standard Deviation	28.4	12.2

Z = 4.01 P-value = 0.0001 Difference between Means - Significant
Since P-value =0.0001, we reject the null hypothesis of equal Means

The Table V. 16 reveals that successful entrepreneurs have on average 32 employees on their roll compared to that of 16 employees engaged by unsuccessful entrepreneurs. The difference between means for the two groups was significant

Initial Investment in Business

Availability of income is an important pre-requisite for establishing any entrepreneurial activity. The initial investment in business of successful entrepreneur and unsuccessful entrepreneurs were Rs. 0.5 lakh and Rs. 0.15 lakh respectively. The maximum investment of the successful entrepreneur was Rs.72 lakhs whereas that of unsuccessful entrepreneur Rs. 2.5 lakhs only. The average initial investment of successful entrepreneur is Rs. 3.5 lakhs as opposed to Rs. 1.2 lakhs of unsuccessful entrepreneurs. See table V. 17. The difference between the two groups in their initial investment was found to be statistically significant.

Table V. 17: Initial Investment in Business

(in lakhs of Rupees)

Statistic	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Minimum	0.5	0.15
Maximum	72	2.5
Mean	3.5	1.2
Standard Deviation	.36	.24

Z = 41.18 P-value = 0.0000 Reject Ho
Difference between Means - Significant

Capital Employed During 2001-02

There is no significant difference noticed in the amount of money invested by successful and unsuccessful entrepreneurs in their business. The successful entrepreneurs invested on an average Rs. 3.35 lakhs and unsuccessful entrepreneurs Rs. 3.15 lakhs. Refer Table V. 18.

Table V. 18: Capital Employed During 2001-02 (in lakhs of Rupees)

Statistic	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No.60)
Minimum	0.24	0.08
Maximum	16.00	8.50
Mean	3.35	3.15
Standard Deviation	2.98	2.85

Z = 0.38 P-value 0.3620 Accept Ho.
Hence difference between Means - Not Significant

Sources of Finance

The sources of finance for the entrepreneurs were Kerala Financial Corporation (KFC), Commercial Banks, Chit Funds and moneylenders, friends and relatives in that order. See Table V. 19. The role of financial institutions like National Small Industries Corporation (NSIC), Small Industries Development Corporation (SIDCO) etc. have been of relatively low order.

Table V. 19: Source of Finance

(Figures in percent)

Sources of Finance	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
KFC	87.50	83.75
Commercial Banks	31.25	32.50
Chit Funds and Moneylenders	20.75	27.50
Friends and relatives	3.75	5.00
SIDCO	2.50	2.50
NSIC	1.25	–

Note .The figures are not additive since the entrepreneurs have more than one source of finance.

There is no difference noticed between the successful and unsuccessful entrepreneurs with regard to source of finance except that chit funds and moneylenders were more frequently associated with unsuccessful entrepreneurs.

Sales Turnover during 2001-02

The average sales turnover of successful entrepreneurs for the year 2001-02 was Rs. 26.93 lakhs which was three times more than that of the turnover of Rs. 9 lakhs of unsuccessful entrepreneurs. Refer table V.20. The difference in the sales turnover during 2001-02 between two groups was statistically significant.

Table V. 20: Sales turnover during 2001-02 (in lakhs of Rupees)

Statistic	Successful Entrepreneurs (No.60)	Unsuccessful Entrepreneurs (No. 60)
Minimum	1.80	0.43
Maximum	144.00	30.00
Mean	27.25	10.50
Standard Deviation	24.32	6.75

Z = 5.14 P-value 0.0000 Reject Ho.
Difference between Means - Significant

Ratio of Sales turnover to Capital Employed

The ratio of sales turnover to capital employed of successful entrepreneurs averaged 12.43 which were more than four times the ratio of 2.95 for unsuccessful entrepreneurs. The difference was statistically significant at 0.05 level. See Table V. 21.

Table V. 21: Ratio of Sales Turnover to Capital Employed During 2001-02

Statistic	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Mean	12.43	2.95
Standard Deviation	4.25	1.5

Z = 16.29 P-value = 0.0000 Reject Ho
Difference between Means - Significant

The successful entrepreneurs had more sales turnover with the capital available than the unsuccessful entrepreneurs. As may be expected, the successful entrepreneurs had a better return on investment compared to unsuccessful entrepreneurs.

Ratio of Sales turnover to Employees

The ratio of sales turnover to number of employees among successful and unsuccessful entrepreneurs was 35.25 and 14.50 respectively. The difference was statistically significant at 0.05 level. The Table V. 22 reveals that the successful entrepreneurs get more return per employee compared to unsuccessful entrepreneurs.

Table 22: Ratio of Sales turnover to Employees during 2001-02

Statistic	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Mean	35.25	14.50
Standard Deviation	3.25	1.5

Z = 44.9 P-value = 0.0000 Reject Ho
Significant difference between Means

Profits Earned During 2001-02

The Table V. 23 reveals that the average profit earned by successful entrepreneur during 2001-02 was Rs. 78640 and that of unsuccessful entrepreneur was Rs. 31330. The successful entrepreneurs earned a profit two and half times more than that of the profit of unsuccessful entrepreneurs. The difference in the profit made during 2001-02 between these two groups was statistically significant.

Table V. 23 Profits Earned During 2001-02

(Rs. in Thousands)

Statistic	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Minimum	8	2
Maximum	720	125
Mean	76.8	33.45
Standard Deviation	42.12	24.6

Z = 6.88 P-value =0.0000 Reject Ho

Significant Difference between Means

The capital invested during 2001-02 by the successful and unsuccessful entrepreneurs suggest that these two groups of entrepreneurs did not differ significantly in their capital investment during the period. However, successful entrepreneurs did differ very significantly by making more annual turnover and more profits than unsuccessful entrepreneurs during the same period.

Reasons for getting into Rubber Industry

Various reasons were cited by entrepreneurs for getting into this business. They had previous experience in the industry line, as a heir to his father who was already in the business, as an alternative to agriculture, availability of raw materials, advice of friends and relatives, etc. This industry requires less of capital investment and there is good demand for rubber products. While previous experience in the same line of business seemed to successful entrepreneurs for getting into industry. Successful entrepreneurs

gave a very low priority for the advice of friends and relatives. The differences in the reasons given for getting into business by successful and unsuccessful entrepreneurs were statistically significant at 0.05 level. Refer Table V. 24.

Table V. 24: Reasons for Getting into Rubber Industry (Figures in percent)

Reasons for getting into Rubber Industry	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Previous experience in similar line	47.50	32.50
Father was in the business	13.75	5.50
Availability of raw materials	11.25	16.25
Alternative to agriculture	11.50	8.50
Advice of friends and relatives	14.75	20.50
Others	1.25	16.75
Total	100	100

df = 5 Table value at 0.05 level = 11.1 Chi-square test statistic= 21.9925
P-value =0.0005 Reject Ho Difference Significant
Since the calculated value is greater than the tabled value at 0.05 level we reject the null hypothesis. Since P-value <0.05 it confirms the above decision.

Sources of Business Information

Sources of information about rubber industry for entrepreneurs are friends, relatives, businessmen, institutions like the Small Industry Service Institute (SISI), Small Industries Development Corporation (SIDCO), District Industries (DIC), Indian Rubber Manufacturers Association (IRMA), Rubber Board, Rubber Research Institute of India, Kerala Small Industries Association (KSSA) and Business journals.

Table V. 25: Sources of Business Information

Source	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
1. Friends	36	58
2. Relatives	46.50	51
3. Institutional (SISI, DIC, KSSA, IRMA, SIDCO, Rubber Board etc)	41	20
4. Business Journals	16	7
5. Businessmen	6	8
6. Personal visit to Industrial Estates and Industrial Development Plots	12	4

Note: The percentage will not add up to a hundred as entrepreneurs have given more than one source.

Table V. 25 reveals that successful entrepreneurs sought information not only from easily accessible and convenient sources like friends, relatives, and businessmen but also from institutions like DIC, KSSA, Rubber Board etc. The successful entrepreneurs also acquired information thorough personal visits to industrial estates and plots as well as reading from trade journals. For unsuccessful entrepreneurs, non-institutional sources were the main source of information. Friends and relatives formed the important source of information for unsuccessful entrepreneurs.

Difficulties Encountered in the Growth of Industry

The difficulties encountered by entrepreneurs could be analyzed in terms of finance, raw materials, labour, government policy, and marketing. The difficulties experienced in finance were shortage of finance, delay in getting bank loan, credit purchase, and delay in payment by agents. Fluctuations in rubber prices and power-cut were the problems with regard to raw materials. In the labour front, shortage of skilled labour, demand for higher wages by workers, high labour turnover and strikes by workers were the difficulties encountered. In marketing, the difficulties faced were lack of

knowledge in marketing, demand for more commission by agents, imitation of products, setting below the standard price by competitors, and forces of globalization. See Table V. 26.

Table V. 26: Difficulties Encountered in the Growth of Business

(Figures in percent)

Difficulties Encountered	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Finance 1. Financial shortage 2. Delay in getting bank loan 3. Credit purchase by agents 4. Delays in bill clearance 5. Loss	50.00	32.50
Raw material 1. Scarcity 2. Machines not available 3. Fluctuations in natural rubber prices 4. Power-cut	41.25	8.75
Labour 1. Shortage of skilled labour 2. High labour turnover 3. Strikes 4. Demand for high wages	20.00	6.25
Marketing 1. Lack of knowledge in marketing strategy 2. Demand for more commission by agents 3. Under-rate sales 4. Competition 5. Impact of Globalization	47.50	20.00

Note: The figures are not additive since the same entrepreneur can face more than one difficulty.

Successful entrepreneurs seem to have experienced more difficulties than the unsuccessful entrepreneurs with respect to finance, raw materials, labour and marketing.

Changes in Business during the era of Economic Reforms

Major changes that have happened in the rubber goods manufacturing industry during the past decades include diversification in the variety of products manufactured, expansion of units and changes in marketing front. Changes with regard to products include modification in footwear suitable for sick people, medical & pharma products, retread materials, rubber rollers, rubber beltings, bridge bearings, rubber wood products etc. Expansion in business includes starting new units, expansion in installed capacity, renovation in plant and machinery etc. Enlarged marketing outlet, specialization in products, more marketing channels, and territory changes from local to export market were reported in marketing.

Successful entrepreneurs have brought about changes in the products they manufactured (82.50 percent for successful versus 57.50 percent for unsuccessful entrepreneurs). This is probably an indication that the successful entrepreneurs have kept pace with the changing environment. Other areas where successful entrepreneurs brought out major changes were in the expansion of the industry 28 percent for successful versus 12 percent for unsuccessful entrepreneurs and in marketing 21 percent for successful versus 10 percent for unsuccessful entrepreneurs.

Technological Change

For a question whether any technological changes have been brought about by entrepreneurs. Sixty five percent of successful as against 40 percent of unsuccessful entrepreneurs reported having brought about technological changes in their business. See Table V. 27. The difference between these two groups was statistically significant.

Table V. 27: Technological Changes brought about by Entrepreneurs

(Figures in percent)

Technological Changes brought about	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Yes	65	40
No	35	60
Total	100	100

df = 1 Table value at 0.05 level = 3.84 Chi-square test statistic = 12.5313

P-value =0.0004 Reject Ho Difference Significant

Since the calculated value is greater than the tabled value at 0.05 level, we reject the null hypothesis. Since P-value < 0.05 it confirms the above decision.

In order to keep pace with the global competition an entrepreneur has to adopt new technology. This will enable the entrepreneur to take a lead over others and be successful in his venture. The successful entrepreneur brought about changes in the quality control systems like ISO accreditation, use of sophisticated machine tools, rubber wood technology etc. (Table V. 28). While 65 percent of successful entrepreneurs reported to have brought technological changes in their business, 60 percent of unsuccessful entrepreneurs did not make any technological changes.

Table V. 28: Nature of Technological Changes

(Figures in percent)

Nature of Technological Changes	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Change in the quality systems	27.25	16.50
Use of sophisticated machines	33.75	18.25
Introduction of rubber wood technology	14.50	11.25
No technological changes reported	35	60

Note: The figures are not additive since the entrepreneurs may report more than one technological change.

Innovations in business

Innovation is introducing something new in the economy- a method of production not yet tested by experience in the branch of manufacture concerned, a product which the consumers are not yet familiar, a new source of raw materials and a new form of organization. Innovation has been considered to be an important attribute of entrepreneurs. The percentage of successful entrepreneurs who introduced innovations in their business was 31.50 as opposed to 8.50 percent of unsuccessful entrepreneurs. Schumpeter (1934) had pointed out that entrepreneurs were innovative individuals. The findings of the present study conform it. The difference was statistically significant. The successful entrepreneur was more innovative than the unsuccessful entrepreneur. Refer Table V. 29.

Table V. 29: Innovations in Business

(Figures in percent)

Reporting	Successful Entrepreneur (No. 60)	Unsuccessful Entrepreneur (No. 60)
Innovations in Business	31.50	8.50
No innovations in Business	68.50	91.50
Total	100	100

df= 1 Table value at 0.05 level =3.84 Chi-square test statistic = 16.5313
P-value = 0.0000 Reject Ho Difference Significant
Since the calculated value is greater than the table value at 0.05 level, we reject the Ho.
Since P-value is < 0.05, it confirms the above decision.

New rubber-based adhesive products, known as construction adhesives, light weight footwear, rubber mounts for isolating individual items such as air-conditioning and refrigeration equipment from the main structure of the building, Chemically Treated and Artificially Seasoned Rubber wood furniture and rubber bridge bearings were some innovative products of entrepreneurs under the present study. Innovations in marketing include entering

export market, testing for quality control, introduction of single piece packing etc. A new method of processing of natural rubber for the making of footwear for sick persons was found in the course of survey. The Table V. 30 reveals that while 26.25 percent of successful entrepreneurs introduced innovation in one form or other on products, only 6.25 percent of the unsuccessful entrepreneurs reported to brought innovations on products. Innovations on the area of marketing and processing of rubber goods were reported by 7.50 and 3.75 percent of successful entrepreneurs. The corresponding percent of unsuccessful entrepreneurs in these areas were negligible.

Table V. 30: Nature of Innovations (Figures in percent)

Nature of Innovations	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Products	26.25	6.25
Marketing	7.50	1.25
Processing	3.75	1.25

Note: The figures are not additive, since the same entrepreneur can express more than one innovation.

Entrepreneurship Development Programmes

For a question whether the entrepreneur needs Entrepreneurship Development Training, about 95.5 percent of successful entrepreneurs said 'yes' and opposed to 80.5 percent of unsuccessful entrepreneurs. The difference was statistically significant. See Table V .31. Training needs of rubber - based entrepreneurs could be classified as technical (Knowledge and use of synthetic rubbers, design, use of modern machines, Information Technology, quality standards etc), financial management (sources of finance, cost control and cost reduction, knowledge about government incentives, tax practices, etc.) marketing strategy and techniques (export marketing, packaging, pricing strategies, promotional strategies like advertising etc.), office and labour management.

Table V. 31: Training Needs of Entrepreneurs (Figures in percent)

Whether the Entrepreneur Needs Training	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No. 60)
Yes	95.50	80.50
No	4.50	19.50
Total	100	100

df= 1 Table value at 0.05 level =3.84 Chi-square test statistic = 10.6534

P-value = 0.0011 Difference Significant

Since the calculated value is greater than the tabled value at 0.05 level, we reject Ho. Since P-value < 0.05 it confirms the above decision.

Successful entrepreneurs evinced more interest than the unsuccessful ones with respect to technical training, marketing management, financial management, labour management and computer applications (See Table V. 32). There are indications that successful entrepreneurs desire to learn more and keep them informed to keep pace with the era of globalization.

Table V. 32: Areas for Training

(Figures in percent)

Area for training	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No.60)
1. Technical	65	21
2. Finance	56	38
3. Marketing	64	37
4.Office and Labour management	42	14

Note: The figures are not additive since the area for training could be more than one.

Future Plans

Future plans of entrepreneurs could be classified as expansion of the unit, expansion of market and diversification. Plans for expansion of the unit included starting of units in neighbouring districts where infrastructural facilities are offered by government and modernization (including IT) of

existing units. Plans for expansion of market included opening show rooms at important towns, increasing the product range and entering into export of rubber products. The diversification plans of entrepreneurs are in the areas of the use of rubber products in rubberisation of roads, use of rubber goods in buildings, medical and pharma products and pneumatic tyres. See Table V. 33

Table V. 33: Future Plans (Figures in percent)

Plans for the Future	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No.60)
Expansion of the Unit	37.50	25.00
Expansion of the Market	22.50	21.50
Diversification	22.50	10.00
No immediate plan for future	10.00	11.25

Note: The figures are not additive since the same entrepreneur can express more than one plan.

Assistance Needed for Success

Various types of assistance are associated with business success-technical knowledge about new products, processes and developments, knowledge of new management techniques, quality control, costing and cost control, training of operatives for modern machines, assistance from banks and Non-Banking Finance Companies (NBFCs), assistance and guidance in marketing, and export procedures, role of government in regulating industry, regulation and fixation of prices of natural rubber, exemption from sales tax etc. Analysis of the Table V. 34 reveals that the successful entrepreneur desired for more of technical information like knowledge of new products, processes and developments whereas the unsuccessful entrepreneur desired more of assistance from government and financial institutions. There is a desire on the part of successful entrepreneurs to stand on their own legs.

Table V. 34: Type of Assistance Required (Figures in percent)

Type of Assistance Required	Successful Entrepreneurs (No. 60)	Unsuccessful Entrepreneurs (No.60)
Technical 1.Knowledge of new products 2.New processes 3.Knowledge of new machines 4.Machinery maintenance	30.00	18.75
Management techniques 1.Quality control 2.Cost control 3.Training for machine operatives 4.Business reengineering 5.Outsourcing	10	–
Finance Assistance from banks and NBFCs	36.25	50.00
Marketing	18.75	16.25
Role of Government	8.75	18.75

Note: The figures are not additive since the same entrepreneurs needs more than one type of assistance.

MOTIVATIONAL DYNAMICS OF ENTREPRENEURSHIP

The term motive is derived from the Latin word 'emovere', which means 'to move'. In fact, without motivation man would be a stagnant creature, never moving, never acting. Psychologists view motivation as the force which impels or incites all living organisms to action. Three elements –needs, drives and goals- interact in motivation. Each may also be thought of as a stage in a cycle, for the first leads to the second, the second to the third and third to the first. Motivation is the will to achieve a goal in order to meet a personal need. The purpose of motivation is to satisfy human needs, for example, to

accomplish a challenging task or to belong to a friendly group. Awareness of the need activate a search for goals to satisfy the need. The motive patterns studied and analyzed in this study are need for achievement (nAch), need for power (nPow) and need for affiliation (nAff). Need for achievement is an urge to excel to do well in reference to some standard of excellence. Need for power is the need to control others or to their decisions. Need for affiliation is a concern for friendly affectionate interactions with others.

Hypotheses Tested

The following hypotheses are tested in the present study:

1) Successful entrepreneurs will score more on need for achievement than the unsuccessful entrepreneurs;
2) Successful entrepreneurs will have lower need for power than the unsuccessful entrepreneurs;
3) Successful entrepreneurs will have lower need for affiliation than the unsuccessful entrepreneurs.

Projective Test

Three different instruments are available to measure the strength of nAch, nAff, and nPow. They are 1) Projective techniques (McClelland et al., 1953). 2) Comprehensive personality inventory scales (Gough, 1957; Edwards, 1959) and 3) Questionnaire measures (Mukerjee, 1965; Costello, 1967; Smith, 1973). Thematic Appreciation Test (TAT) was selected for the present study in view of its projective nature. A person's response to TAT provides an index of one's pre-occupations of the sort of thing one will think about. In the type of situations one sees in the pictures and the direction in which one will move, in similar situations. This was also the assumption of others, who had used it extensively.

McClelland (1955; 1956) in a series of researches has provided evidence that superficial verbal reports of achievement needs are not predictive of achievement oriented behaviour whereas fantasy production is a

valid index of the same. McClelland (1966) and Singh (1978) have also reported that the nAch scores from TAT are stable over a period of time.

Description of the Test

The most commonly used projective test is McClelland's TAT cards (Atkinson, 1958) consisting of six pictures. These pictures have been administered on adult businessmen by McClelland and on entrepreneurs by Wainer and Rubin (1973). The Table V. 35 describes the six TAT picture cards used in the study and the motive aroused by the pictures.

Table V. 35: TAT Photographs for Need Achievement, Need Power and Need Affiliation

TAT Picture Number	Description of the Photograph	Motive Arousal
1.	Lawyer's Office – two men talking in an office	Power
2.	Man seated in front of drafting board	Affiliation
3.	Conference group	Power
4.	Two ladies in a laboratory	Achievement
5.	Man and youth chatting outdoors	Affiliation
6.	Man relaxing on an aeroplane	Achievement

McClelland's picture cards were altered to suit Indian conditions. The pictures have been modified to eliminate cultural bias like the looks, dress etc. without disturbing the image or expression. Modified cards have been developed and used by Veeraraghavan (1966) on textile workers. The present study used the same cards developed by Veeraraghavan (Appendix -2). The same cards have been used by Deivasenapathy (1981) on motivational determinants of success among small-scale entrepreneurs.

Test Administration

The methodology of test administration has remained virtually unchanged. The six TAT pictures are shown to each entrepreneur and they are asked four questions:

1. What is happening? Who are the people?
2. What has led up to this situation? What has happened in the past?
3. What is being thought of? What is wanted? By whom?
4. What will happen? What will be done?

The entrepreneurs were asked to write a story on the basis of the above questions. They were given five minutes to write the story. The six cards were administered to entrepreneurs one by one, individually.

Scoring of the TAT Stories

The procedure reported in Atkinson's (1958) 'Motives in Fantasy, Action and Society' was followed for scoring the stories for Need Achievement, Need Affiliation and Need Power. Appendix 2 gives the operational criteria for scoring the imagery present in the story. According to this procedure in each picture one can get a maximum score of 10 for nAch or nAff or nPow (Appendix -3).

A story written by a respondent containing "Achievement Imagery" is as follows: 'They (two ladies in a laboratory) are part of research team doing their research work to find out the various combinations and chemical reactions as the part of research work. One member is analyzing the reaction process where as the other member is waiting to get the final result of a test.'

An example of a story containing Doubtful Imagery (T1) is as follows:

> 'Two ladies are testing a special chemical in the laboratory. They did not get the expected results and so they are confused. They do not know where it went wrong. They are trying it again and they may succeed'.

> An example of story having unrelated imagery (U1): 'Mother and daughter are discussing the household matters while preparing tea

for their guests. They are not happy with the discussion topic. Mother asks daughter to leave the kitchen. But she opposes to do so.'

The stories have been analyzed for their content and the sub-categories have been scored wherever the imagery has been scored.

Motivational Scores of entrepreneurs

The scoring of stories written by entrepreneurs reveals that the successful entrepreneurs write more of nAch related stories, compared to the unsuccessful entrepreneurs. The difference is statistically significant. It was also found that the successful entrepreneurs' exhibit compared to the unsuccessful entrepreneurs lower Need for Power and lower Need for Affiliation. However, the difference in nPow and nAff scores are not statistically significant. Refer Table V. 36

Table V. 36: Motivational Scores of Entrepreneurs (Mean Score)

Motive Patterns	Scores of Entrepreneurs		Significance of difference between Means
	Successful (No. 60)	Unsuccessful (No.60)	
Need Achievement	4.61	2.21	Significant
Need Power	4.93	5.50	Not Significant
Need Affiliation	3.81	4.20	Not Significant

It appears as if a balanced motivational profile of nAch, nPow and nAff is required for entrepreneur's success. The present study reveals that successful entrepreneurs compared to unsuccessful entrepreneurs have high nAch, moderate nPow and moderate nAff.

The need for achievement is an internal need and the need for power and need for affiliation are interpersonal needs. It is important that an effective entrepreneur, besides being task oriented, should have human

relations skills. Once an entrepreneur starts an industry, he has to play the role of a manager and increasingly deal with people. In the present study the success of entrepreneurs could be traced to their high nAch, which helps task orientation and moderate nPow and nAff, which helps in developing necessary human relations skills to be effective in running the industry. In the case of unsuccessful entrepreneurs, the reasons for their being unsuccessful could be attributable to their low nAch, high nPow and high nAff. The need for power is related to extreme risk taking behavour and the need for affiliation is associated with trying to avoid or withdraw from competing situations (McClelland and Stella, 1973). The unsuccessful entrepreneurs seem to have low task orientation. Similar findings have been reported earlier. Andrews (1967) showed that the managers of growing company have high nAch as well as nPow.

Need for Achievement

The nAch scores of entrepreneurs as revealed by content analysis of the stories reveal that successful entrepreneurs write more stories with achievement imagery. Mean nAch scores of successful and unsuccessful entrepreneurs (table V. 37) reveal that Picture No. 4 (two ladies in a laboratory) and Picture No. 6 (man relaxing on the plane) have brought out more stories with achievement imagery. The two pictures were primarily intended to measure the need for achievement. In both the pictures the successful entrepreneurs score more on nAch than the unsuccessful entrepreneurs. The average nAch score of successful entrepreneurs was 4.61 as opposed to 2.21 of unsuccessful entrepreneurs - the difference was found to be statistically significant. Successful entrepreneurs possess high need for achievement.

Table V. 37: Picturewise Mean Score for nAch

Picture Number	Mean nAch Score of Successful Entrepreneurs (No.60)	Mean nAch Score of Unsuccessful Entrepreneurs (No.60)
1. Lawyer's Office	Nil	0.06
2. Man sitting in front of a drafting board	0.45	0.15
3. Conference Group	0.80	0.20
4. Two Scientists in a laboratory	1.91	0.92
5. Man and Youth chatting outdoors	0.15	0.25
6. Man relaxing on a plane	1.30	0.63
All Combined	4.61	2.21

Z = 3.44 P-value = 0.0000 Reject Ho
Significant difference between Means

Individuals with high nAch prefer personal responsibility for solving problems and for setting achievable goals, by their own efforts. Such high nAch persons are also portrayed as having a strong desire to have feedback of their efforts (McClelland, 1961). The successful entrepreneur of the small-scale rubber based industry in Kerala, with high nAch might very well fit into the profile, McClelland has described.

Results from the present study confirm findings of earlier studies. In India, Hundal (1971) after studying 183 Small- Scale entrepreneurs in Punjab found that high nAch was related to a fast rate of industrial growth. Durand (1975) found that entrepreneurs who exhibit a high level of business activity are those with high nAch. Deivasenapathy (1981) after studying motivational correlates of success among entrepreneurs found that the successful entrepreneurs were high in nAch. High nAch appears to be a special feature of successful agricultural entrepreneurs (Singh and Gupta, 1977).

Need for Power

The need for power scores of entrepreneurs reveals that the unsuccessful entrepreneurs write more stories with power imagery. Picturewise mean scores of nPow by entrepreneurs (table V. 38) reveal that Picture No.1 (lawyer's office) and Picture No. 3 (conference group) bring out more stories with power imagery. Though in Picture No. 1 the two groups do not show any significant difference on nPow, in Picture No. 3 the unsuccessful entrepreneurs score more on nPow.

Table V. 38

Picturewise Mean Score for nPow

Picture Number	Mean nPow Score of Successful Entrepreneurs (No. 60)	Mean nPow Score of Unsuccessful Entrepreneurs (No. 60)
1. Lawyer's Office	2.85	2.75
2. Man sitting in front of a drafting board	Nil	Nil
3. Conference group	1.4	1.80
4. Two Scientists in a laboratory	0.25	0.05
5. Man and youth chatting outdoors	0.28	0.56
6. Man relaxing on a plane	0.15	0.34
All Combined	4.93	5.50

Z = 0.54 P-value =0.2946 Accept Ho
Difference between Means - Not Significant

The average nPow score of successful entrepreneurs from the stories of all the pictures is 4.93 as against to 5.5 of unsuccessful entrepreneurs. However, the difference in the nPow score is not statistically significant.

Since power is viewed as the capacity to influence others' behaviour, nPow seems to be important for an entrepreneur for the very nature of job he does. Once he starts an enterprise the entrepreneur has to perform

several managerial roles and also the role of competitor to other businessmen. Hence, it is desirable that he has at least a moderate level of power motivation. The results of the study suggest that the successful entrepreneurs have moderate level of power motivation. The present study also confirms some of the earlier findings. Wainer and Rubin (1969) in their study of 51 Research and Development entrepreneurs found that company performance was associated with entrepreneurs who were having high nAch and moderate nPow. Andrews (1967) found that manager of a growing company had both high nPow and high nAch.

Need for Affiliation

The successful and unsuccessful entrepreneurs did not differ much, in the writing of stories with affiliation imagery. See table V. 39. Picturewise mean score for nAff by the entrepreneurs' reveal that Picture No. 2 (man sitting in front of a drafting board) and Picture No. 5 (man and youth chatting outdoors) bring out more stories with affiliation imagery. These pictures were primarily intended to measure nAff only. The unsuccessful entrepreneurs score more on Picture No.2 (man sitting in front of a drafting board) for nAff. The nAff stories for both the groups in picture No.5 (man and youth chatting outdoors) are equal.

Table V. 39: Picturewise Mean Score for nAff

Picture Number	Mean nAff Scores of Successful Entrepreneurs (No. 60)	Mean nAff Scores of Unsuccessful Entrepreneurs (No. 60)
1. Lawer's office	Nil	Nil
2. Man sitting in front of a drafting board	2.85	3.2
3. Conference group	Nil	Nil
4. Two scientists in a laboratory	0.15	Nil
5. Man and youth chatting outdoors	0.84	0.85
6. Man relaxing on a plane	0.25	0.15
All Combined	4.09	4.2

Z = .098 P-value =0.4602 Hence accept Ho
Difference between Means - Not Significant

Successful and unsuccessful entrepreneurs did not significantly differ in their nAff score – the successful entrepreneurs scored on an average 4.09 and unsuccessful entrepreneurs scored 4.2 for nAff. Little attention has been given to need for affiliation in the study of entrepreneurship (Rao and Mehta, 1978). The results of the present study also suggest that compared to the unsuccessful entrepreneurs, successful entrepreneurs score lower in nAff.

Thus the analysis of the motivation scores of entrepreneurs reveals the following facts:

1. Successful entrepreneurs and unsuccessful entrepreneurs differed significantly in their need for achievement-the successful entrepreneurs were more achievement oriented;
2. Successful entrepreneurs score low in the need for power and need for affiliation than the unsuccessful entrepreneurs. However the differences in the scores of need for power and need for affiliation between these two groups are not statistically significant; and
3. The motive pattern of successful entrepreneurs, compared to unsuccessful entrepreneurs, is high need for achievement, modest need for power and affiliation.

CHAPTER -VI

SUMMERY AND CONCLUSIONS

Although rubber cultivation was started on a commercial scale in the latter half of the 19th century, rubber-based industry in Kerala was established only in the first half of the 20th century. However, the number of licensed manufacturers in the State has increased substantially over the years, particularly in the post- independence period. From just 54 rubber manufacturing units in 1965-66, the number of licensed rubber-based industrial units has increased to 1300 units in 2001-02. In 2001-02 Kerala occupied the primary position in the number of rubber goods manufacturers in the country. As a direct consequence of the increase in the number of licensed manufacturers, rubber production and industrial output, consumption of rubber has increased considerably. Rubber- based units are facing a lot of problems viz. underutilization of capacity, power shortage, marketing problems etc. These anomalies can be removed only with the assistance and cooperation of the government, Rubber Board, financial institutions, entrepreneurs and trade union leadership. As per the latest report of the Third All India Census of Small Scale Industries 2001-02, Kerala has the third largest number of registered small scale units in the country next after Tamil Nadu and Utter Pradesh. Hence, given the availability of natural rubber, the nucleus of competitive advantage for Kerala is the rubber products manufacturing industry.

Entrepreneurship seems to be the function of at least three factors i.e., entrepreneurial personality, opportunities existing in a social system, and support available for the development of entrepreneurial attitudes, skills and behaviour. This paradigm of entrepreneurship as a function of personality, opportunity and support systems has far reaching implications both for training and management of entrepreneurship. This section recapitulates the

salient findings that emerge from the study briefly with reference to its objectives. This study of entrepreneurship in the small-scale rubber goods manufacturing industry in Kerala compares a cross section of successful and unsuccessful entrepreneurs with respect to socio-economic characteristics and motivational dynamics. Based on a sample survey of 120 entrepreneurs of Kottayam and Ernakulam districts successful and unsuccessful entrepreneurs were selected using multiple criteria. The study provides guidelines for the development of entrepreneurship in Kerala. The criteria used for the selection of successful and unsuccessful entrepreneurs are the following:

1. Consistent increase or decrease in the sales turnover of the firm for a three-year period 1999-00 to 2001-02.
2. The industrial unit has been rated as profit making or running at a loss/ waiting to be declared sick/already declared sick by the entrepreneur.
3. The entrepreneur expressed satisfaction or dissatisfaction with overall functioning of the enterprise and the desire to continue or discontinue in the field.

The study had the following objectives:

1. to analyze the socio-economic characteristics of successful and unsuccessful entrepreneurs.
2. to study the motive patterns of successful and unsuccessful entrepreneurs.
3. to investigate the current thinking on entrepreneurship.
4. to study the status of small-scale rubber goods industry in Kerala.
5. to evolve strategies to promote entrepreneurship in the region.

The measuring instruments designed and used for data collection included

1) Personal interviews 2) Socio-economic questionnaire and 3) Thematic Appreciation Test. The primary data were collected through field surveys and personal interviews with the entrepreneurs of the study region. The results of the study indicate that successful and unsuccessful entrepreneurs differ markedly in certain socio-economic parameters and motivational patterns.

Socio-economic Aspects

Significant differences were observed between successful and unsuccessful entrepreneurs with respect to the following:

The results on the socio-economic survey support the hypothesis that the successful entrepreneurs will differ from unsuccessful entrepreneurs with respect to education, social contacts, initial investment, sales turnover, profits, capital employed, personal income, and number of employees. No significant differences were noticed between these two groups of entrepreneurs with respect to age, founding of business, number of years of experience, sources of finance, traditional family occupation, type rubber products produced, marital status, caste and religion and place of birth.

Successful entrepreneurs encountered more difficulties than unsuccessful entrepreneurs in the areas of finance, raw materials, marketing and labour. His being successful today, in spite of these difficulties indicate that the successful entrepreneur exhibits perseverance and does not give up when confronted with difficulties.

Among the various factors in the growth of an industry, the hypothesis examined was that successful entrepreneurs would differ from unsuccessful entrepreneurs with regard to sources of ideas for starting the business, innovative behaviour and bringing about technological changes.

The important results obtained in support of the hypotheses are:

1. Successful entrepreneurs were found to be self-starters.
2. Successful entrepreneurs adopted a lot more technological changes than unsuccessful entrepreneurs.
3. Successful entrepreneurs were more innovative – the percent of successful entrepreneurs and unsuccessful entrepreneurs reporting innovations in business were 31.50 and 8.50 percent respectively.
4. It is reported that successful entrepreneurs felt more the needs of Entrepreneurship Development Training than the unsuccessful ones.
5. Compared to unsuccessful entrepreneurs, successful entrepreneurs had more social contacts, were members of and held positions of responsibility in more number of organizations connected with business and social activities.
6. The successful entrepreneurs made three times more sales turnover than the unsuccessful entrepreneurs. The average sales turnover of successful entrepreneurs during 2001-02 was Rs. 26.93 lakhs and that for unsuccessful entrepreneurs it was Rs. 9 lakhs.
7. The profits of the successful entrepreneurs were two and half times more than that of unsuccessful entrepreneurs. The profits during 2001-02 for successful entrepreneurs and the unsuccessful entrepreneurs on an average were Rs. 78640 and Rs. 31330 respectively.
8. The average annual income of successful entrepreneurs were Rs. 2,54,560 which is seventy five percent more than that of unsuccessful entrepreneurs' income of Rs. 62440.
9. Assistance (mainly technical areas) was desired by 30 percent of successful entrepreneurs as against the 18.75 percent of unsuccessful entrepreneurs.
10. Future plans of the entrepreneur could be classified as expansion of the unit, expansion of the market, and diversification. One out of every five entrepreneurs had plans for diversification in the area of product line.

Compared to this, only one out of every ten unsuccessful entrepreneurs had plans for diversification.

Motivational Patterns

A high need for achievement has been accepted as a principal motivation of entrepreneurial behaviour for almost four decades. It has been hypothesized that successful entrepreneurs will score more on need for achievement than the unsuccessful entrepreneurs. Analysis of the need for achievement scores as measured through a modified version of McClelland's Thematic Apperception Test revealed, that the successful entrepreneurs of Kerala rubber industry are more achievement oriented. See table VI. 1.

Table VI. 1: Motivation Scores of entrepreneurs

Entrepreneur	Motivation Scores		
	nAch	nPow	nAff
Successful (N: 60)	4.6	4.9	4.1
Unsuccessful (N: 60)	2.2	5.5	4.2

Difference between successful and unsuccessful entrepreneurs found to be Significant.

The Table VI .1 confirms the hypothesis that the successful entrepreneurs will score more on need for Achievement than the unsuccessful entrepreneurs. The other two hypotheses in the study i.e. the successful entrepreneur will have lower need for Power and need for Affiliation than unsuccessful entrepreneurs were not confirmed. The difference between the two groups on nAch and nPow scores was not statistically significant. The results suggest a balanced motivational profile of Need for Achievement (nAch), Need for Power (nPow) and Need for Affiliation (nAff) for entrepreneur's success in venture - the successful entrepreneur were high on need for achievement, moderate need for power and moderate on affiliation.

The need for achievement is an internal need and the need for power and affiliation are interpersonal needs. It is important that an effective entrepreneur, besides being task oriented should have human relations skills as well. Since power is viewed as the capacity to influence other's behaviour, nPow also appears important for an entrepreneur, for the very nature of job he/she does. The entrepreneur has to perform several managerial roles and also the role of competitor to other businessmen. The results of the study suggest that the successful entrepreneurs have moderate level of power motivation. Scientific outlook, economic orientation and stress on achievement help the entrepreneur to have a lead over the unsuccessful entrepreneur and be successful in his venture.

There is a need to develop a sound conceptional base that ensures the emergence of entrepreneurial spirit including values, attitudes and motivation to successfully take up the entrepreneurial pursuits. Training is a strong intervention strategy or influencing media that sets values, develop attitudes and creates drive in people to move in self employment direction with confidence. Entrepreneurial training increases the potential ability to improve performance, minises the chance of failure, increases efficiency, assures better quality results, helps improve employer- employee relationships and prepares the entrepreneur to accept challenges, systemise the workplace and motivate the work forces towards improved performance. Entrepreneurial spirit comprising of values and attitudes is a probable starting point which provides direction and tendency to act. But to pursue the path in such direction one needs force, drive and energy. Such forces are provided by creating inner urge in an individual for efficiency that reflects through competition with others or with one's own standards of performance, or to do something new, something unique, and to make the optimum utilization of resources. This total process is termed as Achievement Motivation on which extensive work has been done by McClelland and his associates. Achievement Motivation which

is usually aroused by providing experiences to associative network and comprises of:

- Clarity of Goal
- Visualizing Need
- Taking Action towards Goal
- Anticipating Success or Failure
- Perceiving and seeking help to overcome Blocks
- Positive and Negative Feelings to Success and Failure.

Suggestions Based on the Study

A few suggestions are offered for enhancing entrepreneurial success. The suggestions are:

1. A well thought out State policy of initiative, regulation and promotion coupled with stepts to create positive social acceptance of entrepreneurship may help in the development of industries in the State. This indeed depends on political will as well as on societal pressure.

2. Measures to encouraging participation of entrepreneurs in business and social organizations.

3. Motivational inputs in entrepreneurship development programmes should be incorporated so as to attain successful entrepreneurship. All possible effort be made very seriously for the development of an industrial culture. It should be realized that the central core of entrepreneurship is the motive force since its very nature entrepreneurship implies positive action and initiative. Motivated individuals with right kind of combination of abilities and attributes can pursue their goal with unremitting courage and enthusiasm.

4. While selecting potential entrepreneurs for training those with high Need for Achievement should be preferred.

5. Rubber being the most abundant resource available in the State, the scope for development of a number of sophisticated as well as conventional industries based on the same in the State is much high. Like the Silicon Valley in California, there is a chance of developing 'Rubber Valley' in Kerala so that entrepreneurship in this area shall be promoted. Cluster development in rubber–based industry may be a paradigm shift in the industrial scenario of the State. Kerala should emerge as a major exporter of rubber products resulting from its capabilities in high-tech areas.

6. Government of Kerala and Rubber Board should jointly come forward to set up a consultancy organization to provide feasibility reports of rubber products, updated technology linkage effect of the industry on other sectors and to impart Entrepreneurship Motivation Training to entrepreneurs.

7. One method of increasing opportunity and ensuring entrepreneurial success is by providing a network of support systems under Entrepreneurship Development Programmes.

8. It is felt that we lack strategies. We should promote business strategies for the fostering of entrepreneurship in the State. Public –Private Partnership between public institutions and private business could be one innovative strategy to tackle the issues pertaining to small business sector. Partnership may be for financial assistance, for manpower development, creating testing and research facilities or even for support services for promotion and development of rubber goods manufacturing in the State.

9. In order to attain global competitiveness, it is necessary for the small- scale rubber products industry to increase its productivity. Attaining higher productivity would require technological upgradation, product innovation

and flexibility which inturn would require increased networking interlinkages with large firms as well as global linkages on the part of the rubber industry.

10. Manufacturing should be considered as a function and activity central to a consumer state like Kerala.

The upshot of the above analysis can lead to the conclusion that psychological characteristics like the achievement motivation, ability to take risk, attitude against common apprehensions, leadership skills, etc are seem to be strongly associated with entrepreneurial success. Socio-economic factors like parental background, membership in organization, technical and professional education, innovations, sales volume, amount of capital investment, financial backup, locational advantage, and easy access to market are also found to have strong correlation with entrepreneurial success. The creation of entrepreneurial attitude and achievement motivation is a future challenge and priority.

APPENDIX - 1

SOCIO-ECONOMIC QUESTIONNAIRE

A. Personal Particulars:

1. Name :
2. Sex
3. Marital Status
4. Age
5. Education : High School/Pre-Degree or Higher Secondary/ Graduate/ Post Graduate/ Technical : Degree/Diploma/Certificate
6. Place of Birth (if NRI Specify)
7. Number of years in Rubber industry :
8. Address of the registered office :
9. Other jobs held
10. Occupation of the Father :
11. Other Business interest
12. Positions held in Organizations:

Organization	Name of the organization	Positions held
1. Social		
2. Political		
3. Religious		
4. Recreational		
5. Business		
6. Others (Specify)		

A. Sociological particulars:

1. Religion :
2. Caste :
3. Traditional family business :
4. Who are the founders of the business?
5. Are you the founder of this business?
6. When was it founded?
7. From where did the founder get his/her ideas for starting the business?
8. Why did the founder start this business and not any others?

C. Economic Particulars:

1. Your annual income :
2. What was the initial investment in business?
3. What were the difficulties encountered in getting the business established? :
4. What major changes have happened in your business during the last five years?:
5. Give the information on the development of your business during the last three years with respect to the following

Head	Year		
	1999-00	2000-01	2001-02
a. Capital			
b. Turnover			
c. Profit			
d. Number of Employees			

6. What is the return on capital employed? Is it more than the prevailing fixed deposit rate of commercial banks?
7. What technological changes have happened in your business?
8. What are the innovations in your business? :
9. Ownership of Enterprise
    a. Proprietorship
    b. Partnership
    c. Company :
    d. Co-operative
10. Products manufactured (Specify)
11. Where did you get your finance?
12. What are the problems faced by you with regard to growth in the business?
    a. Finance :
    b. Labour :
    c. Marketing
    d. Technical
13. What type of assistance do you need for success in business? :
14. What plans do you have for the future (in terms of expansion, diversification or setting up of new units)? :
15. Scope of sales :
    a. Local; b. State; c. National; d. International:
16. Did you ever avail the following facilities?
    a. Transport subsidy
    b. Sales tax exception
    c. Raw materials
    d. Investment subsidy

e. Import duty exception

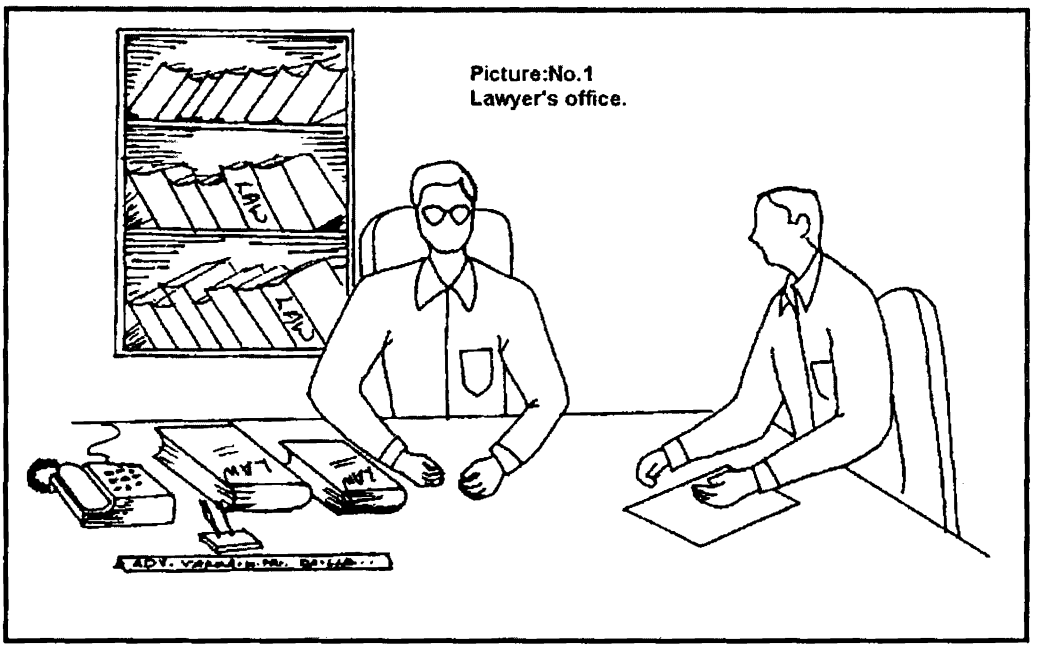
f. Any other

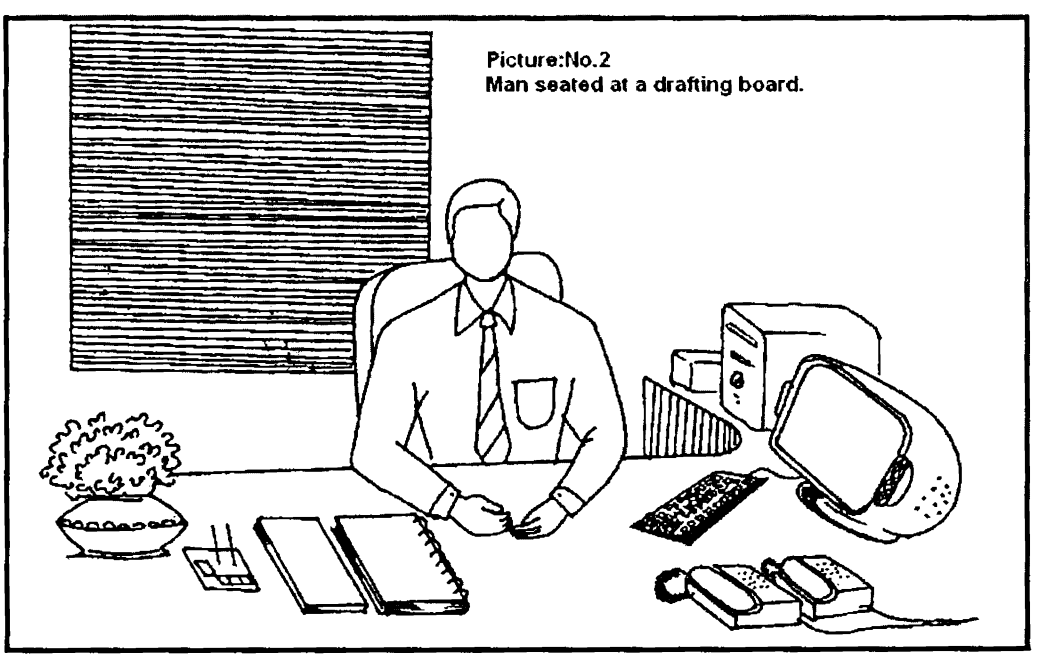
17. Did you attend the Entrepreneurship Development Programme?

18. What are the specific areas for training that you need for your business?

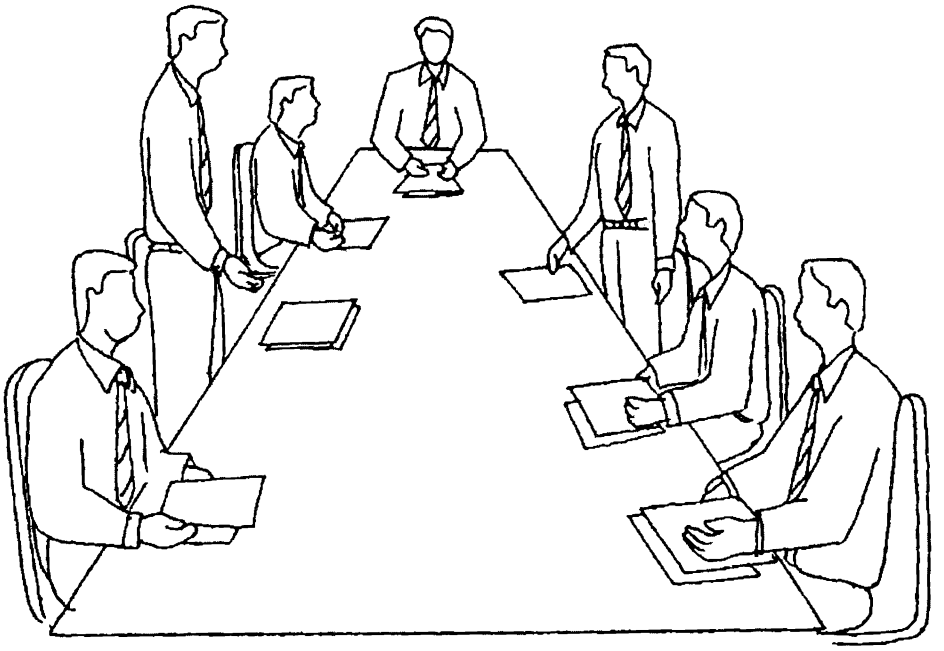
19. From where did you get information about the business?

Appendix-2

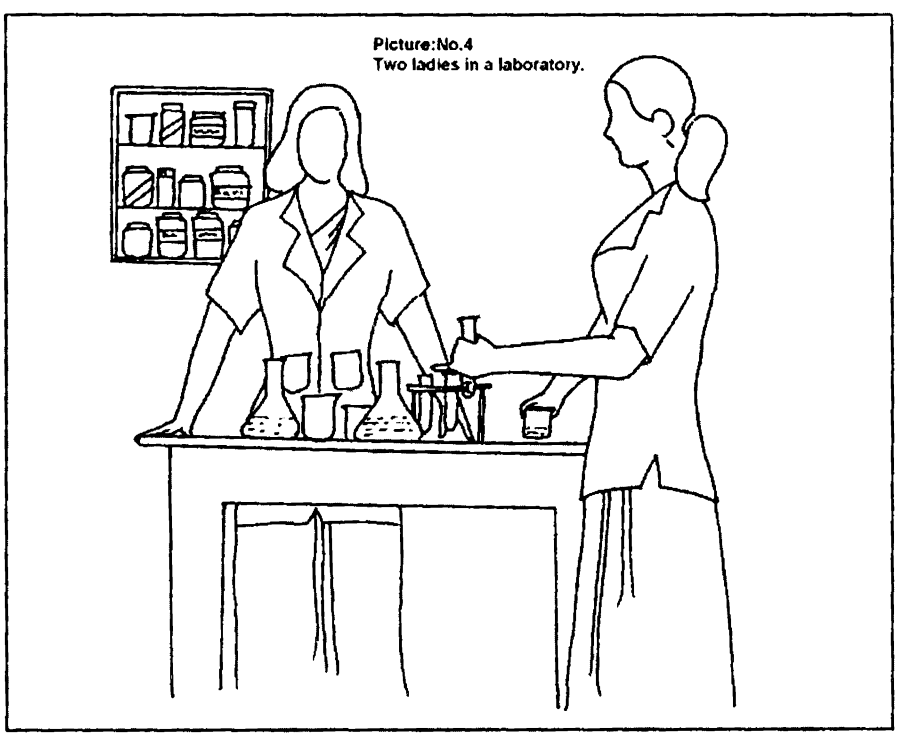

Picture:No.1
Lawyer's office.
LAW
LAW
LAW

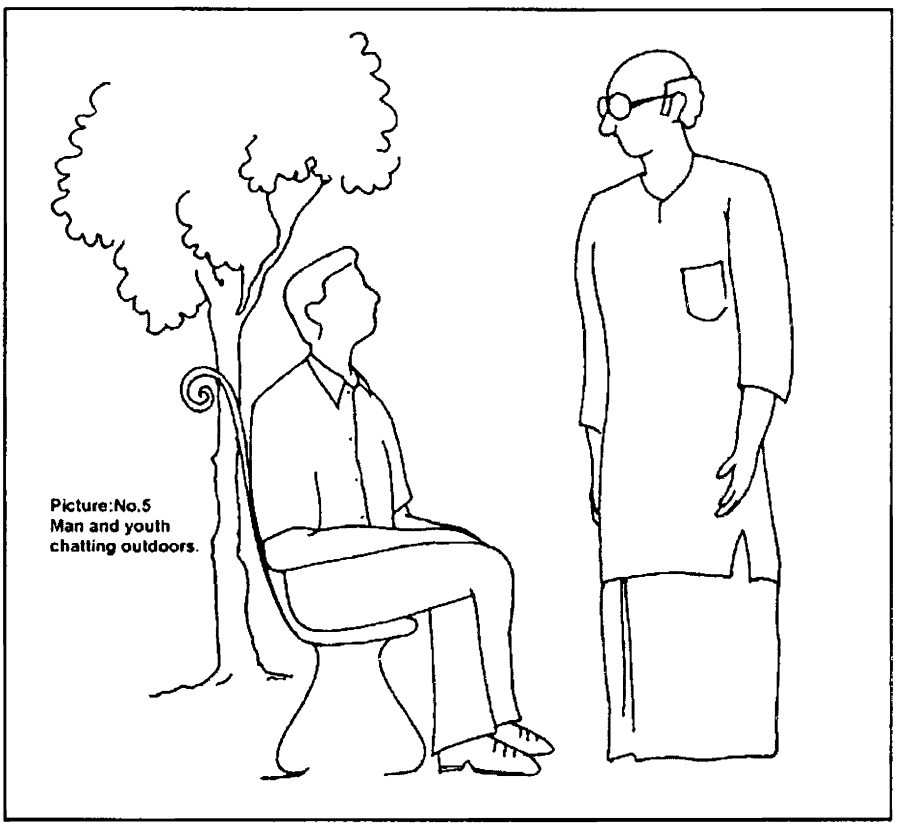

Picture:No.2
Man seated at a drafting board.

Picture:No.3
Conference group.

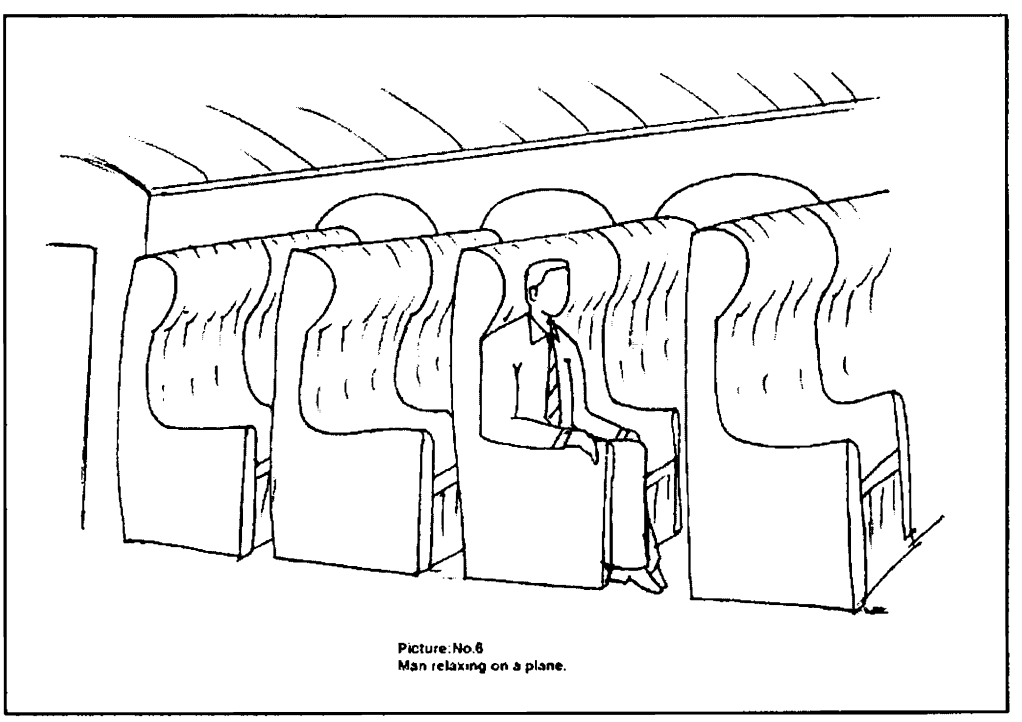


Picture:No.4
Two ladies in a laboratory.





Picture:No.5
Man and youth
chatting outdoors.



Picture:No.6
Man relaxing on a plane.

APPENDIX -3
ENTREPRENEURS IN RUBBER PRODUCTS MANUFACTURING INDUSTRY - PROJECTIVE TEST

Instruction for taking the Test

An important personal asset is imagination. This test gives you an opportunity to use your imagination to show how you can create ideas and situations by yourself. On the following pages, you are to make up and write out a brief, imaginative story for each of the six pictures. You can have five minutes for each story. To help you cover all the elements of a story plot within the time allowed, you with find these questions repeated at the top of each picture.

1. What is happening? Who are the people?
2. What has led up to this situation? What has happened in the past?
3. What is being thought of? What is wanted? By Whom?
4. What will happen? What will be done?

Please remember that the questions are only guides for your thinking; you need not answer each question specifically. Your story should be a continuous one and not just a set of answers to these questions.

There are no 'right' or 'wrong' answers. Try to make your stories interesting and dramatic. Don't just describe the pictures, but write stories about them. Now look at Picture No.1 and write the story suggested to you by the picture. Don't take more than five minutes. Then look at Picture No.2 and so on until you complete stories for all the six pictures that follow.

APPENDIX - 4

SCORING FOR ACHIEVEMENT, AFFILIATION AND POWER MOTIVES

Score	Operational Criteria for Scoring
Imagery	A I- Achievement Imagery Criteria 1. Competition with a standard of excellence 2. Unique accomplishment 3. Long-term involvement
	Aff I – Affiliative Imagery Criteria Concern for establishing, maintaining or restoring a positive, affective relationship with another person
	Pow I – Power Imagery Criteria References to the control of the means of influencing a person. 1. Statement of affect 2. Statement of control activity 3. Statements of superior- subordinate role relations
Doubtful Imagery T I	Criteria for scoring imagery not met but story contains references to achievement, affiliation or power goals
Unrelated Imagery U I	No reference to achievement, affiliation or power goals
Need N	Stated need for 1. achievement 2. affiliation 3. power
Instrumental goals Activity	Activity designed to lead to achievement, affiliation, power I + Successful instrumental activity I ? Doubtful instrumental activity I - Unsuccessful instrumental activity
Anticipatory Goal State Ga + Ga -	Ga + Anticipatory goal state, one of success- positive Ga – Anticipatory goal state, one of failure- negative Both Ga+ Ga – can occur in the same story
Obstacles or Blocks BP BW	BP: Obstacles or blocks to the goals directed activity from within the individual – personal obstacle. BW: Block in the world – obstacles from the environment. BP and BW may occur in the same story.
Affective State G + G -	Affective emotional states associated with attainment of goal or frustration of the goal related activity. G +: Positive Affective State G- : Negative Affective State Both G + and G – feelings may be scored in the same story.
Thema Th	Thema is scored when the achievement, affiliation, power imagery is elaborated in such a manner that it becomes the central plot or theme of the story

APPENDIX -5

SCORING SYSTEM USED FOR nAch, nAff, AND nPow

	Motive	nAch	nAff	nPow
1. Ach/ Aff/ Pow Imagery	A I Aff I P I	+1	+1	+1
2. Doubtful Imagery	T I	0	0	0
3. Unrelated Imagery	U I	- 1	- 1	-1
4. Need	N	+1	+1	+1
5. Instrumental Activity	1+ 1? 1-	+1	+1	+1
6. Anticipated Goal State	Ga +	+1	+1	+1
7. "	Ga -	+1	+1	+1
8. Obstacles or Blocks	BP	+1	+1	+1
9. "	BW	+1	+1	+1
10. Affective State	G +	+1	+1	+1
11. "	G -	+1	+1	+1
12. Thema	Th	+1	+1	+1
Maximum Imagery Score		+10	+10	+10

Note: Sub categories are scored only when imagery had been scored. Each sub category scored accounting for +1. The nAch, nAff and nPow scores for a particular person is the sum of all scores obtained on all the stories written by that person.

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